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VALIDATION REPORT

SHAOYANG TRIUMPH BILLION YUZITANG POWER STATION DEVELOPMENT LTD, CO.

VALIDATION OF

CHINA HUNAN YUZITANG SMALL HYDROPOWER PROJECT

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REPORT NO. 01 997 9105043936

REVISION NO. 05

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CDM Validation Report Template
Version 5.0, November 2006

VALIDATION REPORT

Date of first issue: 14th December 2007	Project No.: 01 997 9105043936	*TÜV Rheinland Japan Ltd.* *Shin Yokohama Daini Center Bldg., 3-19-5, Shin Yokohama Kohoku-ku, Yokohama 222-0033*
Approved by: Dr. Manfred Brinkmann	Organisational unit: Energy and Environment Technol. Industrial Services	
Client: Carbon Asset Management Sweden AB	Client ref.: C/o Mr. Niels Von Zweigbergk	Certificate Number 01 997 9105043936

Project Name: China Hunan Yuzitang Small Hydropower Project
Country: P.R. China
Methodology: AMS-I.D.
Version: 12
GHG reducing Measure/Technology: Hydropower
ER estimate: 27,398 tCO_2e/a

Size
☐ Large Scale
☒ Small Scale

Validation Phases:
☒ Desk Review
☒ Follow up interviews
☐ Resolution of outstanding issues

Validation Status
☐ Corrective Actions Requested
☐ Clarifications Requested
☒ Full Approval and submission for registration
☐ Rejected

In summary, it is TÜV Rheinland's opinion that the China Hunan Yuzitang Small Hydropower Project in P.R. China, as described in the revised PDD of 31st July 2008, meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria and correctly applies the baseline and monitoring methodology AMS-I.D. (Version 12). TÜV Rheinland thus recommends for registration of the project as a CDM project activity with the UNFCCC.

Report No.:	Date of this revision:	Rev. No.
01 997 9105043936	19th Dec 2008	05

Report title:
China Hunan Yuzitang Small Hydropower Project

Work carried out by:
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Work verified by:
- Dr. Manfred Brinkmann

Indexing terms
Climate Change
Kyoto Protocol
Validation
Clean Development Mechanism
Small-scale Hydropower Project

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Abbreviations

Explain any abbreviations that have been used in the report here.

BE	Baseline Emission
BM	Build Margin
CAM	Carbon Asset Management Sweden AB
CAR	Corrective Action Request
CCPG	Central China Power Grid
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
CM	Combined Margin
CO_2	Carbon Dioxide
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
DRC	Development and Reform Commission
EB	Executive Board
EIA	Environmental Impact Assessment
EPB	Environmental Protection Bureau
ER	Emission Reduction
ERPA	Emission Reduction Purchase Agreement
FAR	Forward Action Request
FSR	Feasibility Study Report
GHG	Greenhouse Gas
GWh	Giga Watt Hours
HHDII	Hunan Provincial Hydropower Design and Investigation Institute
HNCDM	Hunan CDM Project Service Center
I	Interview
ICBC	Industrial and Commercial Bank of China
IM	Interim Measures for Operation and Management of CDM projects
IETA	International Emissions Trading Organisation
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
kW	Kilo Watt
kWh	Kilo Watt Hours
L	Leakage
LHDII	Loudi Hydropower Design and Investigation Institute
LoA	Letter of Approval
LoI	Letter of Intent
MoV	Means of Verification
MW	Mega Watt
MWh	Mega Watt Hours
NC4	National Coordination Committee on Climate Change
NDRC	National Development and Reform Commission
NGO	Non Government Organisation
NO_x	Nitrogen Oxides
O&M	Operation & Maintenance
ODA	Official Development Assistance
OM	Operating Margin
OSV	On Site Visit
PDD	Project Design Document
PDR	Preliminary Design Report
PE	Project Emission
SA	Sensitivity Analysis

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SItC	Supplier Information to Client
SO_2	Sulphur Dioxide
STBY	Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co.
STHS	Stakeholder Survey
t	Tonne
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value-added Tax

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1 EXECUTIVE SUMMARY – VALIDATION OPINION

The audit team of TÜV Rheinland Japan Ltd., TÜV Rheinland Group (TÜV Rheinland) has performed a validation of the "China Hunan Yuzitang Small Hydropower Project" in P.R. China on the basis of UNFCCC criteria for Clean Development Mechanism (CDM) projects according to Article 12 of the Kyoto Protocol and subsequent decisions of the CDM Executive Board with regard to CDM modalities and procedures and the application of approved methodologies. The validation report and the validation protocol are summarizing the findings of the validation.

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The review of the project design documentation and the subsequent follow-up interviews have provided DOE with sufficient evidence to determine the fulfilment of stated criteria.

The validation was executed in the following steps so far:

- Public stakeholder comment process (21st October to 19th November 2007)
- Desk review of preliminary PDD (Version 1, 30th September 2007)
- On-site visit with stakeholder interviews (26th to 28th November 2007)
- Issue of checklist with corrective action requests (CARs) and clarification requests (CLs) and the draft validation report & protocol
- Desk review of revised PDD (Version 04, 19th December 2008)
- Review of proposed corrections and clarifications
- Issue of the final validation report & protocol

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The host country is P.R. China. The Letter of Approval (LoA) of voluntary participation, including confirmation by China's DNA – National Development & Reform Commission (NDRC) (Document no.: 1019), that the project assists them in achieving sustainable development, has been issued in March 2008.

The project activity is bilateral CDM-project, with Sweden identified as the Annex I party. The LoA from Sweden has also been issued on 29th January 2008.

The validation did not reveal any information that indicates that the project can be seen as a diversion of ODA funding towards China. It is also reflected from the Sweden LoA that the Sweden DNA confirms that "*public funding is not used for the purchase of Certified Emission Reductions from the Project*".

The project correctly applies AMS-I.D./Version 12 – "Grid connected renewable electricity generation", in connection with ACM0002/Version 06 – "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".

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This report summarizes the results of the document review, background investigation, follow-up interviews with local stakeholders and the staff at the project site during the visit to the project. This process enabled the team to conduct a risk-based review of material issues with impact on future claims of the emission reduction from the project activity. The concerns thereof, in the form of validation findings have been registered in the Validation Protocol.

By generating renewable energy from clean hydro resource, which displace grid electricity, the project results in reductions of CO_2 emissions that are real, measurable and give long-term

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benefits to the mitigation of climate change. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The total emission reductions from the project are estimated to be on the average 27,398 tCO_2e per year over the selected 7-year renewable crediting period. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given that the underlying assumptions do not change.

Adequate monitoring procedures have been implemented according to the monitoring methodology AMS-I.D./Version 12. Training plan is available and the training programme was provided by the manufacturers since the end of Year 2006.

The project proponent has resolved all Corrective Action Requests and Clarification Requests as stated in the first Validation Report and the Validation Protocol, which has resulted in a revision of the PDD. In the opinion of TÜV Rheinland the China Hunan Yuzitang Small Hydropower Project meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria and correctly applies the baseline and monitoring methodology AMS-I.D./Version 12. Therefore, TÜV Rheinland requests the registration of the "China Hunan Yuzitang Small Hydropower Project" as a CDM project activity.

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2 INTRODUCTION

Carbon Asset Management Sweden AB (CAM) has commissioned the audit team of TÜV Rheinland to perform a validation of the China Hunan Yuzitang Small Hydropower Project (hereafter called "the project"). This report summarises the findings of the validation of the project, performed on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM modalities and procedures, and the subsequent decisions by the CDM Executive Board.

2.1 Objective

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

2.2 Scope

The validation scope is defined as an independent and objective review of the project design document (PDD). The PDD is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords, and the relevant decisions by the CDM Executive Board, including the approved baseline and monitoring methodology. The validation team has, based on the recommendations in the Validation and Verification Manual employed a risk-based approach, focusing on the identification of significant risks for project implementation and the generation of CERs.

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

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3 METHODOLOGY

The validation consists of the following three phases:

I a desk review of the project design documents

II follow-up interviews with project stakeholders

III the resolution of outstanding issues and the issuance of the final validation report and opinion.

The following sections outline each step in more detail.

3.1 Desk Review of the Project Design Documentation

The following table outlines the documentation reviewed during the validation:

/1/ International Emission Trading Association (IETA) & the World Bank's Prototype Carbon Fund (PCF): Validation and Verification Manual.

http://www.ieta.org/ieta/www/pages/index.php?IdSitePage=394

/2/ UNFCCC, AMS-I.D./Version 12, "Grid connected renewable electricity generation", EB33

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/3/ UNFCCC, ACM0002/Version 06, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", 19th May 2006

/4/ UNFCCC, "Simplified modalities and procedures for small-scale clean development mechanism project activities"

/5/ Project Design Document (PDD), version 1, 30th September 2007

/6/ Project Design Document (PDD), version 04, 19th December 2008

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/7/ The National Development and Reform Commission of The People's Republic of China (i.e. China DNA), Letter of Approval (Document no.: 1019), March 2008

/8/ Swedish Energy Agency (i.e. Sweden DNA), Letter of Approval, 29th January 2008

/9/ Hunan Provincial Hydropower Design and Investigation Institute, Feasibility Study Report (FSR), July 2002

/10/ Loudi Hydropower Design and Investigation Institute, Preliminary Project Design Report (PDR), April 2004

/11/ Shaoyang Environmental Protection Research Centre, Environmental Impact Assessment (EIA) Report, November 2006

/12/ Hunan Provincial Water Resource Bureau, Approval of Preliminary Design Report (PDR) (Ref no.: XiangShuiNongDian [2004] (20)), 15th July 2004

/13/ Hunan Provincial Development and Planning Commission, Approval of FSR (Ref no.:

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XiangJiJiChu [2003] (798)), 4th November 2003

/14/ Hunan Provincial Environmental Protection Bureau, Approval of EIA Report, 26th December 2002

/15/ Shaoyang Environmental Protection Bureau, Assessment Report of EIA, 25th December 2002

/16/ Shaoyang Municipal Ministry of Water Resources, Approval of construction commencement (Ref no.: ShaoShuiDianKaiShen [2004] (05)), 16th August 2004

/17/ Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co., Grid connection agreement, 22nd September 2003

/18/ Hangzhou Chengde Electric Factory, Purchase contract of water turbines (model no.: HLA551-WJ-82) & generators (model no.: SFW3200-8/1730), 13th May 2006

/19/ Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co., Business licence (Licence no.: 430500400000079), 16th August 2007

/20/ Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co., Organization chart

/21/ Loudi Hydropower Design and Investigation Institute, Master project layout plan (Ref no.: ZongTi-03), March 2004

/22/ Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co., Directorial meeting minutes (Introduction of CDM implementation concept), 4th May 2004

/23/ Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co., Directorial meeting minutes (Project finance discussion), 12th June 2004

/24/ Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co., Directorial meeting minutes on establishment of CDM working group & CDM implementation, 2nd September 2004

/25/ Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co., Directorial meeting on change of company registration name and revised company financial structure, 21st July 2007

/26/ Shaoyang Municipal Bureau of Commerce, Approval on change of company registration name and re-structure of company financial constitution (Ref no.: ShaoShiShangWuWaiZiShenZi [2007] (016)), 14th August 2007

/27/ People's Government of Hunan Province, Certificate of approval on establishment of enterprises with investment of Taiwan, Hong Kong, Macao and Overseas Chinese in the People's Republic of China (Ref no.: ShangWaiZiXiangShaoShenZi [2004] (0005)), 14th August 2007

/28/ Industrial and Commercial Bank of China (Shaoyang Branch), Letter of Intent for loan approval (with consideration of CDM income to proposed project), 19th July 2004

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/29/ Industrial and Commercial Bank of China (Dongkou Branch), Letter of loan approval, 5th November 2004

/30/ Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co. & Hunan Sci. & Tech. Information Research Institute (HNSTI), Letter of Intent on CDM project development, 8th July 2004

/31/ Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co. & Hunan CDM Project Service Center (HNCDM), CDM service contract, 18th August 2006

/32/ Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co. & Carbon Asset Management Sweden AB, Purchase agreement of Certified Emission Reduction (CER), June 2006

/33/ Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co., CDM training record (training provided by Hunan CDM Project Service Center (HNCDM)), 7th December 2006

/34/ Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co. & People's Government of Dongkou County Nuoxi Village, Land acquisition compensation agreement, 11th November 2004

/35/ Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co. & Dongkou County Nuoxi State-owned Forestry Company, Agreement on land acquisition compensation arrangement and voluntary road maintenance works, 1st June 2004

/36/ Project financial calculation worksheet

/37/ Project GHG emission calculation worksheet

/38/ Office of National Coordination Committee on Climate Change, Baseline emission Factor Calculation Result of China Grids, 9th August 2007

http://cdm.ccchina.gov.cn/web/NewsInfo.asp?NewsId=1890

/39/ General Office of State Council, Notice on strictly prohibiting the installation of thermal power units with capacity of 135MW or below (Ref no.: GuoBanFaMingDian [2002] (6)), 15th April 2002

/40/ Ministry of Water Resources in P. R. China, Economic Evaluation Code for Small Hydropower Projects (Ref no.: SL16-95), 2nd June 1995

http://www.cws.net.cn/guifan/bz/sl16-95/

/41/ Ministry of Water Resources in P. R. China, Hydroenergy design code for small hydro power projects (Ref no.: GB50071-2002), 1st March 2003

/42/ Department of Industry and Transport Statistics, National Bureau of Statistics & Energy Bureau, National Development and Reform Commission, People's Republic of China, China Energy Statistical Yearbook 2004 to 2006

/43/ China Electric Power Yearbook Editorial Board, China Electric Power Yearbook 2001

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/44/ Dongkou County Development and Planning Bureau, Tariff approval document (Ref no.: DongjiFaZi [2004] (102)), 6th August 2004

/45/ Hunan Provincial Price Bureau, Tariff adjustment notification document (Ref no.: XiangJiZhong [2004] (114)), 4th August 2004

/46/ Shaoyang City Price Bureau, Approval of on-grid tariff of Yuzitang hydropower project as 0.26 RMB/kWh (Ref no.: ShaoJiaDian [2008] (92)), 15th July 2008

/47/ Dongkou County Price Bureau, Agreement notice on execution of on-grid tariff of 0.26 RMB/kWh (Ref no.: DongFaGai [2008] (96)), 17th July 2008

/N1/ Hunan Sci. & Tech. Information Research Institute, Internal application letter for establishment of a CDM service center (HNCDM) under HNSTI (Ref.: XiangKeXin [2005] (15)) >, 5th July 2008

&

Hunan Provincial Science & Technology Bureau, (Hand-written) Approval by Head of Hunan Provincial Science & Technology Bureau on establishment of HNCDM for management of CDM service, 20th July 2005

/N2/ Ministry Of Science and Technology (MOST) of P.R. China, Online announcement on establishment of HNCDM , 9th November 2005

/N3/ Carbon Asset Management Sweden AB, Internal email communication within CAM on ERPA negotiation, 15th March 2007

/N4/ National Development and Reform Commission – Department of Climate change, Approval status of CDM projects in China (up to 10th October 2006)

3.2 Follow-up Interviews with Project Stakeholders

Identify any personnel who have been interviewed and/or provided additional information to the presented documentation.

	Name	Organization	Title
/i/	Xie Xiong	Dongkou County Development and Reform (Price) Commission	Director
/ii/	Li Dixi	Dongkou County Environmental Protection Bureau	Director
/iii/	Hu Binhua	Dongkou County Land and Resource Bureau	Director
/iv/	Wu Ligeng	Dongkou County Power Supply Company	Deputy Manager

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/v/	Yuan Zhenxuan	Industrial and Commercial Bank of China (Dongkou Branch)	Manager
/vi/	Chen Haidong	Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co.	General Manager & Financial Director
/vii/	Tang Ronghai	Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co.	Accountant
/viii/	Zeng Songlan	Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co.	Operator
/ix/	Mr. Xiang	Chalu Hydropower Station	Operator
/x/	Li Feng	Hunan CDM Project Service Center	Project Officer
/xi/	Jiang Wenqing	Nuoxi Village	Villager
/xii/	Ms. Long	Nuoxi Village	Villager

Table 1 Interview topics

	Date	Organization	Topic
/1/	26th November 2007 to 28th November 2007	Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co. (STBY)	➢ Project design ➢ Project related legal issues ➢ Technical equipment ➢ Sustainable development issues ➢ Additionality ➢ Crediting period ➢ Monitoring plan ➢ Training history ➢ Management system ➢ Environmental impacts ➢ Stakeholder process ➢ Approval by the host country
/2/	26th November 2007 to 28th November 2007	Hunan CDM Project Service Center (HNCDM)	➢ Project design ➢ Technical equipment ➢ Sustainable development issues ➢ Baseline determination ➢ Additionality ➢ Crediting period ➢ Monitoring plan ➢ Management system ➢ Environmental impacts ➢ Stakeholder process ➢ Approval by the host country

/3/	27th November 2007 to 28th November 2007	Hunan / Dongkou Municipality & Local Community	➢ Project design ➢ Project related legal issues ➢ Project status ➢ Sustainable development issues ➢ Environmental impacts ➢ Stakeholder process ➢ Issues affecting the local community ➢ Approval by the local governments

3.3 Resolution of Outstanding Issues

The objective of this phase of the validation is to resolve any outstanding issues which need be clarified prior to TÜV Rheinland's positive conclusion on the project design. In order to ensure transparency a validation protocol is customised for the project. The protocol shows in transparent manner criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

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

The validation protocol consists of three tables. The different columns in these tables are described in the figure below. The completed validation protocol for the China Hunan Yuzitang Small Hydropower Project is enclosed in Appendix A to this report.

Findings established during the validation can either be seen as a non-fulfilment of CDM criteria or where a risk to the fulfilment of project objectives is identified. Corrective action requests (CAR) are issued, where:

i) mistakes have been made with a direct influence on project results;
ii) CDM and/or methodology specific requirements have not been met; or
iii) there is a risk that the project would not be accepted as a CDM project or that emission reductions will not be certified.

A request for clarification (CL) may be used where additional information is needed to fully clarify an issue.

A revised version of the PDD, Version 04 of 19th December 2008, has been submitted to the audit team for final validation, which is revised based on the first validation report and the issued corrective action requests and clarification requests. The major changes include: project location more accurate; starting dates of project activity & crediting period amended; project history included; baseline discussion on Alternative 3; approach of conducting sensitivity analysis with annual operation hours and annual O&M cost included; monitoring plan revised; background information of stakeholder questionnaire, etc.

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Validation Protocol Table 1: Mandatory Requirements for CDM Project Activities		
Requirement	***Reference***	***Conclusion***
The requirements the project must meet.	*Gives reference to the legislation or agreement where the requirement is found.*	*This is either acceptable based on evidence provided (**OK**), a **Corrective Action Request (CAR)** of risk or non-compliance with stated requirements or a request for **Clarification (CL)** where further clarifications are needed.*

Validation Protocol Table 2: Requirement checklist				
Checklist Question	***Reference***	***Means of verification (MoV)***	***Comment***	***Draft and/or Final Conclusion***
The various requirements in Table 2 are linked to checklist questions the project should meet. The checklist is organised in different sections, following the logic of the small-scale PDD template, version 03 - in effect as of: 22 December 2006. Each section is then further sub-divided.	*Gives reference to documents where the answer to the checklist question or item is found.*	*Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.*	*The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.*	*This is either acceptable based on evidence provided (**OK**), or a **corrective action request (CAR)** due to non-compliance with the checklist question (See below). A request for clarification (CL) is used when the validation team has identified a need for further clarification.*

Validation Protocol Table 3: Resolution of Corrective Action and Clarification Requests			
Draft report clarifications and corrective action requests	***Ref. to checklist question in table 2***	***Summary of project owner response***	***Validation conclusion***
If the conclusions from the draft Validation are either a CAR or a CL, these should be listed in this section.	*Reference to the checklist question number in Table 2 where the CAR or CL is explained.*	*The responses given by the project participants during the communications with the validation team should be summarised in this section.*	*This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".*

Figure 1 Validation protocol tables

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3.4 Internal Quality Control

The validation report including the validation findings underwent a technical review before requesting registration of the project activity. The technical review was performed by a technical reviewer qualified in accordance with TÜV Rheinland's qualification scheme for CDM validation and verification.

3.5 Validation Team

Role/Qualification	Last Name	First Name	Affiliation of Team Members
Team Leader MSc, BEng	Wong	Wai Kwok	TÜV Rheinland Hong Kong Ltd.
CDM Auditor MSc, BSc	Chan	Wilfred	TÜV Rheinland Hong Kong Ltd.
CDM Auditor MSc, BSc	Fan	Roy	TÜV Rheinland Hong Kong Ltd.
Internal Reviewer PhD	Brinkmann	Manfred	TÜV Rheinland Japan Ltd.

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4 VALIDATION FINDINGS

The findings of the validation related to the revised PDD are stated in the following sections. The validation criteria (requirements), the means of verification and the results from validating the identified criteria are documented in more detail in the validation protocol in Appendix A.

The final validation findings relate to the project design shall be documented and described in the validation report, where the corresponding responses shall be reflected in the revised and resubmitted project design documentation.

4.1 Participation Requirements

The project participants are Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co. (STBY) from P.R. China, and Carbon Asset Management Sweden AB (CAM) from Sweden, where the host party and Annex I country meet all relevant participation requirements in CDM.

The Letter of Approval (LoA) /7/ (Document no.: 1019) has been issued by the DNA of P.R. China – National Development & Reform Commission (NDRC) in March 2008 for authorizing STBY as project participant and confirming that the project contributes to China's sustainable development.

The proposed project is a bilateral CDM-project, with Sweden identified as the Annex I party. The LoA from Sweden /8/ has also been issued on 29th January 2008.

The project does not receive any public funding, according to Annex 2 of the PDD. The validation did not reveal any information that indicates that the project can be seen as a diversion of official development assistance (ODA) funding towards China. It is also reflected from the Sweden LoA that the Sweden DNA confirms that "*public funding is not used for the purchase of Certified Emission Reductions from the Project*". The project is co-funded by private China-based and Hong Kong-based investors in a way that the China-based investors share 53.91% of the registered capital, and is responsible for the overall project management. Whilst, the Hong Kong-based investor shares 46.09%, and does not involve in any part of the power plant operation. The re-structure of STBY's company financial constitution is approved by the Shaoyang Municipal Bureau of Commerce on 14th August 2007, and the certificate of approval /27/ is verified by the audit team to be valid. The project proponent raises it own funding from internal accrual and loans from banks, i.e. Industrial and Commercial Bank of China (ICBC) (Dongkou Branch). The bank loan approval /29/ dated 5th November 2004 was signed between STBY & ICBC (Dongkou Branch), and has been checked by the audit team to be valid.

4.2 Project Design

The "China Hunan Yuzitang Small Hydropower Project" is a diversion type hydropower project involves the construction of a grid-connected hydropower plant with 9.6 MW nominal generating capacity. The project owner is Shaoyang Triumph Billion Yuzitang Power station

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Development Ltd, Co. (STBY). The proposed project is located in Gongxi River, which is a branch of Yuanshui River, Nuoxi Town, Dongkou County, Shaoyang City, Hunan Province, P. R. China. The geographical coordinates is East Longitude 110°11'26" and North Latitude 27°03'15", which is checked by the audit team to be accurate. The proposed project comprises 3 units of 3.2 MW rated output water turbines (model no. HLA551-WJ-82) and 3 units of generator sets (model no. SFW3200-8/1730). All equipments of the project are supplied by domestic manufacturers with no foreign technology transferred from abroad. The total installed capacity is 9.6 MW and the net power supply is 28,100 MWh per year (after the phase II completion in December 2007). The annual utilization hour for power generation is 2,927 hours. The estimation of power generation is in accordance with the Preliminary Design Report (PDR) which follows the National Standard (Ref no.: GB50071-2002), namely 《*Hydroenergy design code for small hydro power projects*》/41/. The electricity generated from the proposed project is expected to substitute the power from Central China Power Grid (CCPG) which is mainly composed of fossil fuel-fired power plants. The expected GHG emission reduction of the proposed project is 27,398 tCO_2e per annum over the next 7 years.

A "Grid connection agreement" /17/ for connection of local power grid with the power generation system of the proposed project has been signed with Dongkou County Power Supply Company on 22nd September 2003.

A CER buyer, i.e. Carbon Asset Management Sweden AB, has signed the agreements of CER purchase /32/ with the project owner in June 2006. The assumed CER price is adopted by the project proponent in carrying out the financial analysis. The document is available for inspection by the audit team to be valid.

The proposed technology was approved as part of the Preliminary Design Report (PDR) /10/ in April 2004 and the project design engineering reflects a current good practice in promoting the use of renewable energy, as well as contribution to sustainable development in China. The project is considered to be contributing to sustainable development in the host country (P.R. China), by on one hand utilizing renewable hydro resources available in the project region, and on the other hand eliminating the environmental pollution caused by operation of fossil fuel-fired plant. In addition to CO_2 emission reductions, the project would mitigate other pollutants, such as SO_2, NO_x and particulates associated with power generation from fossil fuel. Several more benefits would be expected by implementation of the proposed project, which includes improvement in the local electricity generation, local traffic, economy, overall social development and local employment condition. New employment opportunities are created during the project construction and operation phase. During on-site visit, the audit team has interviewed with the general manager of the proposed project (Mr. Chen Haidong /vi/) and confirmed that a total of 237,900 man-days have been employed for project construction, where the audit team can re-confirm the information by checking against the PDR (p.198, Section 8.6 – Construction Plan) to be valid. A total of 10 numbers of new employment opportunities have been created according to the employment plan stipulated in the PDR (p.221, Section 12.2 – Project Management), which includes power plant management staff (5 nos.) & production team (5 nos.). They are mainly responsible for daily operation of the power station, data monitoring, regular system maintenance, emergency team and administrative works, etc. Besides, additional tax income induced from the sale of electricity shall be resulted to the local government. As confirmed by the local government officials, namely Mr. Xie Xiong /i/, from Dongkou County Development & Reform

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Commission during on-site interview, sustainable development in social, environmental and economic aspects can be achieved by implementation of the proposed project.

During the site interview with STBY's management representative, it is understood that STBY, with assistance provided by the Hunan CDM Project Service Center (HNCDM), is responsible for organizing the necessary training for the operation, maintenance and monitoring of CDM implementation. Operational staffs with relevant professional qualification and education background are employed for the power plant operation. The project-specific training programme was provided by the manufacturers & CDM consultant since the end of Year 2006 /33/.

The Operation Manual and Maintenance Manual, which are prepared by STBY, are available during on-site audit for inspection. The operation and maintenance manuals are deemed sufficient to ensure proper project operation and monitoring, since the manuals were prepared by the water turbine manufacturer, who is also responsible to deliver relevant training. To further strengthen, it was learnt during on-site visit that operational staff with relevant professional qualification and education background were employed for the power plant operation. Regarding the CDM-specific operation and monitoring, the project owner has engaged the CDM consultant (HNCDM) to provide necessary related trainings to their operational staff since the end of Year 2006. Training records had been checked by the audit team to be valid.

The PDR was prepared by the Loudi Hydropower Design and Investigation Institute (LDHII) in April 2004, and was approved by the Hunan Provincial Provincial Water Resource Bureau (Ref no.: XiangShuiNongDian [2004] (20)) on 15th July 2004 /12/. LHDII attains the Class II consulting qualification granted by the State, and is a company specialized in new energy engineering consultation and industrial analysis.

The physical construction of the proposed project has been commenced in September 2004. As observed during on-site visit, the main project construction work has been substantially completed. Installation of main equipments, incl. water turbines and generator sets, has been commenced in June 2006 and was completed in mid-2007. The three nos. of power generation units subsequently started for trial run since July 2007, and the full-scale power generation has been commenced in early-2008.

According to the PDD, a renewable crediting period of 7 years is selected. The starting date of project activity is 16th August 2004 (i.e. signing date of project construction approval) /16/, which is confirmed by the audit team to be the earliest of the dates at which the implementation or construction or real action of the project activity began. The starting date of crediting period is 1st November 2008, or the date of registration as CDM project activity (whichever later), and the expected operational lifetime of the project activity is 32 years (including 2 years construction period).

As indicated during the on-site interview with the management representative, the director board of STBY began to focus on the CDM development and studied the possibility in applying for CDM support since mid-Year 2004. The audit team is able to check the supporting documents as below:-

Date	Evidence document
4th May 2004	Directorial meeting minutes /22/
12th June 2004	Directorial meeting minutes /23/
2nd September 2004	Directorial meeting minutes /24/
[Note: In the meeting minutes listed above, it reads that during the meetings the CDM incentive has been introduced by the Financial Director (Mr. Chen Haidong /vi/) that the CDM income has been seriously considered prior to project implementation in order to implement the Yuzitang project owing to the encountered financial obstacles.]	
8th July 2004	Letter of Intent on CDM project development signed with Hunan Sci. & Tech. Information Research Institute (HNSTI) /30/
[Note: This document demonstrates the solid CDM development arrangement with CDM consultant.]	
19th July 2004	Letter of Intent for loan approval issued by ICBC (Shaoyang Branch) /28/
[Note: This document shows that the bank has readily acknowledged the intended CDM application of the proposed project and considered the CDM income significantly improve the poor project financial condition.]	

By checking the above listed documents, it can be verified by the audit team that the incentive from the CDM was seriously considered in the decision to proceed with the project activity. It is clearly demonstrated that the CDM has been seriously considered since May 2004, which is prior to the project starting date on 16th August 2004.

To further demonstrate that continuing and real actions were taken to secure the CDM status for the project activity, in line with the requirements of EB41, Annex 46, paragraph 5(b) guidance, the validation team has discussed during the on-site visit and subsequent communications with the project participants. The validation team had indeed entered the reviewed evidence documents (as submitted with the request for registration) into the reference list (Section 3.1) of the submitted Final Validation Report (Ver. 04, 2008-08-12) and verified them again in order to meet the relevant requirements in EB41 on demonstration of the taken continuing and real actions for securing the project CDM status. Regretfully, the validation report addressed mainly the CDM consideration prior to the starting date, but did not further discuss the project participants' continued efforts to develop the CDM project as such after starting date. With this revised validation report, the validation team would like to consolidate all project milestones and thus present a clear demonstration of the project history and the validation thereof.

The CDM-related activities and project key implementation dates are consolidated in the "Project History" as attached to this document (page 24ff.).

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Considering the project milestones, it can be observed that the CDM has been seriously considered by the Director Board (DB) of the project owner (Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co. (STBY)) since 4th May 2004, which is earlier than the project starting date on 16th August 2004. In the several consecutive DB meetings, the Financial Director of STBY (Mr. Chen Haidong) suggested to develop the proposed project as CDM project activity, and the DB decided to proceed with the CDM development. The main discussion therein (recorded in DB meeting minutes, Ref no. /22/ to /23/), includes following statements:-

1) "…CDM is a new international mechanism, particularly stimulating renewable energy projects (incl. hydropower projects) development."
2) "…The national CDM administrative regulation is under preparation, which shall encourage investors to invest in future renewable energy industry."
3) "…It is suggested to further strengthen the study works on CDM matters, and kick-off to work on the application process in appropriate time. Meanwhile, it is also essential to assess the cost and return of applying CDM project."
4) "…CDM is a new and professional concept, it is currently unclear where the risk is. Considering the lack of experience and shortage of appropriate CDM specialists in our company, it is suggested to invite relevant external experts to handle the development of CDM project, and appoint Mr. Chen Haidong as responsible person internally."
5) "…It is the DB's preliminary conclusion that the Yuzitang project meets the CDM application criteria. In viewing also the progress of "trial-run" CDM programme initiated by the HNSTI, we expect the CDM development could bring us annual income of approx. 1.5 million RMB."
6) "...The CDM development cost is not considered a huge investment, we should engage the best local CDM experts in assisting the application works. We could also provide the bank the information about our CDM development, which shall greatly enhance their impression to our financial performance, so as to facilitate the loan approval."
7) Discussed the measures to consolidate the CDM development works:-
   i) Sign CDM development contract with provincial design institute or sci. & tech. institute ASAP;
   ii) Engage CDM expert from the province to prepare the CDM application materials. At the same time, go communicate with other CDM hydropower projects for experience sharing;
   iii) Under guidance of CDM expert, prepare materials for submission to bank to introduce the intended CDM development and the possible income, as well as the benefit brought to the economy, society & environment…

The validation team thus confirms that the PP is able to indicate its awareness of the CDM prior to the project activity starting date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project.

On the other hand, according to the requirement stipulated in EB41 Annex 46 paragraph 5(b), the project participants must also indicate that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation. In the following the validation of relevant milestones is presented.

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After several rounds of internal discussions in the DB meetings, STBY made the decision to proceed with the CDM development. Later, a CDM development agreement has been reached with the local consultant (namely Hunan Sci. & Tech. Information Research Institute, HNSTI) and a Letter of Intent /30/ on CDM project development was then co-signed on 8th July 2004. HNSTI was engaged to be responsible for provision of CDM consultancy service, CDM feasibility study, buyer sourcing, etc. An excerpt of the 'scope of work' is listed below for reference:-

1) *Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co. (STBY, as the project owner), entrusts Hunan Sci. & Tech. Information Research Institute (HNSTI) to start studying the CDM development of the China Hunan Yuzitang Small Hydropower Project;*
2) *HNSTI shall be responsible in policy consultation & development during early study stage, and conduct analysis & advisory during CDM project development stage;*
3) *Any benefit / liability linked with the project development shall be subject to the final contract co-signed by STBY & HNST*

Before the project construction being approved to be commenced, the proposed project obtained a Letter of Intent /28/ from Industrial and Commercial Bank of China (ICBC) (Shaoyang Branch) on 19th July 2004 claiming that after considering the possible CDM income to improve the financial performance of the proposed project, ICBC expressed their preliminary loan approval and further submission to the Provincial Branch for loan approval endorsement. Subsequent official bank loan approval /29/ by ICBC (Dongkou Branch, i.e. the loan releasing branch at local level) was obtained on 5th November 2004.

On 16th August 2004, the project construction commencement is approved by the Shaoyang Municipal WRB /16/, which is being marked as the project starting date. The validation team confirms that this is the earliest date at which either the implementation or construction or real action of a project activity begins. Following the project commencement, the DB of STBY hence decided on 2nd September 2004 for establishment of CDM work group for the practical move in CDM implementation /24/.

Since the establishment of CDM work group by STBY in September 2004, a noticeable time lag is noted before entering into the CDM consultant service contract with HNCDM in August 2006. The project participants provided an explanation (before release of the validation report) that this time lag was due to the limited capacity of the entrusted CDM service provider (HNSTI) at that time In order to confirm that explanation independently, the validation team has reviewed supplementary information regarding the development history of HNSTI on its CDM-related business, and understood that the "Science Policy & Strategy Research Department" was the unit responsible for the CDM-related business within HNSTI as early as in April 2004. At that early time, the Science Policy & Strategy Research Department focused rather on soft CDM research, than physical CDM development. On top, owing to the limited proficiency in English language and hence PDD writers, HNSTI decided on 5th July 2005 to apply internally to establish a CDM service center /N1/, i.e. HNCDM. Approval from the Head of Hunan Provincial Science & Technology Bureau on the proposed service center establishment was obtained on 20th July 2005 /N1/. Thereafter, HNCDM was officially established on 9th November 2005 to commence the actual work on the CDM projects. This date has been validated by means of an official public announcement by the Ministry Of Science and Technology of P.R. China) (http://www.most.gov.cn/dfkjgznew/200512/t20051208_26678.htm, /N2/).

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At the early stage of HNCDM's establishment, while the recruitment of PDD writers had just begun, the processing of those committed projects was supported by engaging experts from MOST and professors from Tsinghua University, including works e.g. buyer sourcing, etc. During 2005 & 2006, staff of HNSTI & HNCDM attended various capacity building trainings (Refer to /N2/). Upon being well trained and equipped, HNCDM signed the CDM consultant service contract on the proposed project with the PP /31/ on 18th August 2006.

For a parallel comparison, the validation team has also studied on the CDM development history in China (http://cdm.ccchina.gov.cn/english/NewsInfo.asp?NewsId=1206, /N4/), and observed that there were only 125 projects in total being approved by the DNA of China as of October 2006. Among them, there was still approx. 30% not yet being registered at UNFCCC at that time being. It can be hence explained that it's the whole national-scale CDM development moving slowly at that period of time, which is generally imputed to the shortage in CDM professionals.
This development is also reflected in the limited number of projects hosted in China and published for Global Stakeholder comments:
until Dec. 2004: 2
until Dec. 2005: 37 (total)
until Aug. 2006: 150 (total)
The validation team thus considers the time lag between September 2004 to August 2006 on the CDM status development of the proposed project being plausible.

HNCDM then started to identify an Annex-I project participant for the proposed project and finally, on 29th September 2006, the PP signed a Letter of Intent on CER purchase with Carbon Asset Management (CAM); this letter was submitted with the request for registration (document "CDM consideration documents", p.11-12). Following that, internal discussion on ERPA negotiation has been continually carried on within CAM. Internal email communication within CAM staff on the CER price has been submitted and checked by the validation team to be valid /N3/.

On 21st July 2007, the DB of STBY decided to change the company name & capital structure so as to become a Chinese-owned company with 53.9% share of domestic capital (fulfilling requirements of Chinese DNA to issue host country approval) /25/. (Note: The proposed project was originally being invested by Hong Kong-based investors. The same has been discussed and validated by the validation team, referable to Section 4.1 & CL01 of the submitted Final Validation Report (Ver04).). This action is also considered to be taken by the project owner in order to promote and secure their CDM development status.

After re-confirming the company property to be eligible in applying CDM in China, the PP, CDM consultant & carbon buyer then moved to source the DOE validation service. Subsequently, TÜV Rheinland Japan was commissioned as the DOE on 15th October 2007 (refer to "CDM consideration documents" p.37-38), and the PDD of the proposed project has been published for global stakeholder consultation from 21st October 2007 to 19th November 2007:
http://cdm.unfccc.int/Projects/Validation/DB/ACXPC3NVIAHGMQJ2X63UYRX9VZFTL2/view.html

To summarize the on-site validation findings, TÜVR has issued a Draft Validation Report (Report no.: 01 997 9105043936 (Ver00)) on 14th December 2007 requesting for clarification of unclear subjects. Meanwhile, LoAs from Sweden & China DNAs were received

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respectively on 29th January 2008 and March 2008 /8 & 7/. After resolving all open questions raised in the Draft Validation Report and passing internal technical review, the Final Validation Report (Report no.: 01 997 9105043936 (Ver04)) was issued by TÜVR on 12th August 2008 for official submission to UNFCCC CDM EB for requesting registration as CDM project.

Summary:

The validation team has reviewed the submitted evidence documents and confirms these to be authentical and conclusive. The project participants have demonstrated their CDM considerations prior to the project starting date, and that such consideration played a decisive role in the financing of the project. Whereas there is the period between starting date and the establishment of the CDM consultant's operative unit is marked by little tangible progress, this should be seen in context of the overall development of the CDM in China during that period. The lack of qualified resources and experience resulted in few projects maturing during that period. The time to develop the CDM project activity as such is therefore deemed plausible.

Considering the entire project implementation history, the validation team concludes that the proposed project has sufficiently demonstrated its continuing and real actions taken to secure the project CDM status in parallel with its implementation. Compliance to EB41 Annex 46 – Guidance on the demonstration and assessment of prior consideration of the CDM, paragraph 5(b) is therefore confirmed.

Project History:

Date (dd/mm/yy)	Project milestone	Evidence document (Ref no. in reference list of submitted FVR)
04/2004	Preparation of Preliminary Design Report (PDR) completed	Loudi Hydropower Design and Investigation Institute, PDR (Ref no. /10/)
04/05/2004	Director Board (DB) meeting – Introduction of CDM implementation concept	STBY, DB meeting minutes (Ref no. /22/)
12/06/2004	DB meeting – Decided to apply for CDM project registration	STBY, DB meeting minutes (Ref no. /23/)
08/07/2004	Reached CDM development agreement with local consultant	STBY & HNSTI, Letter of Intent on CDM project development (Ref no. /30/)

Date (dd/mm/yy)	Project milestone	Evidence document (Ref no. in reference list of submitted FVR)
	(namely Hunan Sci. & Tech. Information Research Institute (HNSTI))	
15/07/2004	Obtained PDR approval from Hunan Provincial Water Resource Bureau (WRB)	Hunan Provincial WRB, Approval of PDR (Ref.: XiangShuiNongDian [2004](20)) (Ref no. /12/)
19/07/2004	With consideration of CDM income to the proposed project, the Bank (ICBC – Shaoyang Branch) expressed the preliminary loan approval and further submission to Provincial Branch for endorsement	ICBC (Shaoyang Branch), Letter of Intent for loan approval (Ref no. /28/)
16/08/2004	Obtained project construction approval (Project starting date)	Shaoyang Municipal WRB, Approval of construction commencement (Ref.: ShaoShuiDianKaiShen [2004] (05)) (Ref no. /16/)
02/09/2004	DB meeting – Decided on establishment of CDM working group & CDM implementation	STBY, DB meeting minutes (Ref no. /24/)
05/11/2004	Obtained bank loan approval from ICBC (Dongkou Branch)	ICBC (Dongkou Branch), Letter of loan approval (Ref.: GongYinXiangDaiShen [2004](131)) (Ref no. /29/)
05/07/2005	HNSTI submitted the application to establish a CDM center	HNSTI, Application letter for establishment of Hunan Province CDM Project Service Center (HNCDM) (Ref.: XiangKeXin [2005](15)) (new supplementary document, /N1/)
20/07/2005	Obtained approval from the Head of Hunan Provincial Science & Technology Bureau on establishment of HNCDM	Hunan Provincial Science & Technology Bureau, Hand-written approval for establishment of HNCDM

Date (dd/mm/yy)	Project milestone	Evidence document (Ref no. in reference list of submitted FVR)
		(new supplementary document, /N1/)
09/11/2005	Establishment of Hunan Province CDM Project Service Center (HNCDM)	Ministry Of Science and Technology of P.R. China (MOST), Online announcement on establishment of HNCDM http://www.most.gov.cn/dfkjgznew/200512/t20051208_26678.htm (new supplementary document, /N2/)
18/08/2006	Signed CDM consultant service contract with HNCDM	STBY & HNCDM, CDM service contract (Ref no. /31/)
29/09/2006	Signed Letter of Intent with carbon buyer (i.e. Carbon Asset Management Sweden AB (CAM))	STBY & CAM, Letter of Intent on CER purchase (Referable to the submitted registration document, namely "CDM consideration documents", p.11-12)
15/03/2007	Internal discussion within carbon buyer (CAM) on ERPA negotiation	Internal email communication of CAM (new supplementary document, /N3/)
21/07/2007	DB meeting – Decided to change the company name & capital structure so as to become a Chinese-owned company with 53.9% share of domestic capital (fulfilling requirements of Chinese DNA to issue host country approval)	STBY, DB meeting minutes (Ref no. /25/)
15/10/2007	Confirmation with TÜV Rheinland (TÜVR) on DOE validation service	Email communication between CAM & TÜVR (Referable to the submitted registration document, namely "CDM consideration documents", p.13-14)
21/10/2007 to 19/11/2007	The proposed project starts to be globally published in TÜVR's & UNFCCC's websites	UNFCCC's CDM website: http://cdm.unfccc.int/Projects/Validation/DB/ACXPC3NVIAHGMQJ2X63UYR

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Date (dd/mm/yy)	Project milestone	Evidence document (Ref no. in reference list of submitted FVR)
		X9VZFTL2/view.html TÜVR's website: http://www.tuvdotcom.com/pi/web/TuvdotcomIdSearchResults.xml?TUVdotCOMID=9105043936&LanguageSelected=en-us&strUserId=&strUrlId=3&strLevel=-1
14/12/2007	Draft Validation Report issued by TÜVR	Draft Validation Report (Report no.: 01 997 9105043936 (Ver00))
29/01/2008	Swedish Letter of Approval (LoA) received	Swedish Energy Agency (i.e. Sweden DNA), LoA (Ref no. /8/)
03/2008	China LoA received	NDRC (i.e. China DNA), LoA (Ref. no. /7/)
12/08/2008	Final Validation Report issued by TÜVR	Final Validation Report (Report no.: 01 997 9105043936 (Ver04))

4.3 Baseline Determination

The project applies the approved simplified baseline methodology for small-scale CDM project activities AMS-I.D./ Version 12 titled "Grid connected renewable electricity generation", which is available to be applied since EB33. The use of this methodology is considered appropriate as the project activity involves electricity generation for a grid through hydro sources where the output is below the threshold of 15MW. The baseline is the emission reduction occurring due to electricity generation through a fuel-fired power plant connected to the grid, i.e. CCPG.

The project boundary is clearly defined as the physical, geographical site of the renewable generation source, which comprise the project site and the grid electricity system boundary which is defined as the CCPG including the Henan, Hubei, Hunan, Jiangxi, Sichuan provincial grids & Chongqing municipal grid, on the basis of information announced by

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NDRC /38/ on 9th August 2007. There are no significant transmission constraints between the power plants of the CCPG.

Applicability criteria for the baseline methodology are assessed by the audit team by means of document review and interview. It is agreed in the audit team's opinion that the proposed project fully met the criteria as described below:-

- The proposed project is a diversion type hydropower project which generates electricity by utilizing the renewable hydro resource, which supplies electricity to and displaces electricity from the connected grid, i.e. CCPG. CCPG mainly comprises fossil fuel-fired power plants which bears lot more than one fossil fuel-fired generating unit;
- The total installed capacity of the proposed project is 9.6MW, which is below the threshold of 15MW for small-scale CDM project;

There is no registered small-scale project activity under the CDM or an application to register another CDM small-scale project activity under the CDM by the project proponent within the previous two years with the same project category and technology within 1 km of the project boundary of the proposed project. This is confirmed by the audit team during on-site interview with the project owner & relevant government officials (Mr. Hu Binhua (Land and Resource Bureau), Mr. Xie Xiong (Development & Reform Commission), & Mr. Wu Ligeng (Power supply company)), who all indicated that the proposed project is the 1st hydropower project being developed by the project owner and the nearest hydropower plant (namely Chalu Hydropower Station) is located at least 20 km away from the proposed project power plant. In addition, the audit team is able to check up with the UNFCCC website and identify no other hydropower project being developed by the project owner (namely Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co. (STBY)). Therefore, the proposed project is not deemed to be a de-bundled component of a large project activity.

It is illustrated in the PDD that the baseline scenario is selected from evaluation of alternatives. A numbers of plausible alternatives to the project activity have been identified as follows:-

Alternative 1 – The project activity not undertaken as CDM project activity;

Alternative 2 – Construct a fossil fuel-fired power plant with equivalent annual electricity generation, connected to the grids;

Alternative 3 – Construct a renewable power plant with equivalent annual electricity generation; &

Alternative 4 – Get equivalent electricity supply from the CCPG annually

These alternatives are described in a transparent manner in the PDD and only Alternative 4 was considered feasible and could be realistic. The audit team has verified the justification for the barriers faced by the alternatives and is described as follows:-

Alternative 1 – The audit team has checked up with the IRR calculation and observed in

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the spreadsheet that a project IRR of 6.62% shall be resulted from the proposed project without CDM income. While the benchmark IRR for construction material industry is 10.0%, according to the authoritative financial analysis reference – "Economic Evaluation Code for Small Hydropower Projects" (Ref no.: SL16-95) /40/, the project could not demonstrate its financial attractiveness to potential investor. Please refer to Section 4.4 for details.

Alternative 1 is therefore not feasible.

Alternative 2 – For construction of fossil fuel-fired power plants, it is prohibited by the <Notice on strictly prohibiting the installation of thermal power units with capacity of 135MW or below> released by State Council on 15th April 2002 (Ref. No.: GuoBanFaMingDian [2002] (6)) and <Temporary rules on construction management of small-scale thermal power units> released by State Council in August 1997 for strictly controlling the construction of thermal power plants with capacity under 100MW.

It is also confirmed by the local government officials from Dongkou County Development and Reform Commission /i/ during stakeholder interview and is concurred by the audit team that construction of a fossil fuel-fired power plant with equivalent annual electricity generation, i.e. 9.6MW, is legally not feasible in P. R. China.

Alternative 2 is therefore also not feasible.

Alternative 3 – By referring to the information references provided by the project proponent sourced from <Energy Dictionary> p.392 (i.e. China solar energy distribution)[1] & p.413 (i.e. China wind energy distribution)[2], it is agreed by the audit team that the project location is lack of solar and wind resource for power generation in a similar project scale. Where there is also no utilizable geothermal resource available locally according to the information source from Energy Management Net[3], such power generation development is also not feasible.

The audit team can also confirm by referring to the document[4] released by the Ministry of Agriculture of P.R. China dated May 2007, that the biomass power generation technology is still relatively immature in China and the development cost is rather high. In addition, there is no reasonably effective encouragement policy from the State for promoting long-term biomass power generation development in the aspects of project finance, marketing or even the relevant legal system. All in all, the biomass energy development is not readily feasible unless special financial aid is present.

Besides, the audit team has also confirmed with the Director of Dongkou County Development & Reform Commission, i.e. Mr. Xie Xiong /i/, during on-site interview that the development cost in Hunan Province in solar PV power generation is high and not attractive in view of business development. And due to the inadequate wind and biomass resource for power generation, wind and biomass power plant could not provide comparable output as the proposed project does. Based on the

[1] Energy Dictionary, Page 392 - China solar energy distribution
[2] Energy Dictionary, Page 413 - China wind energy distribution
[3] Energy Management Net, Current development of geothermal energy in China, http://www.wesharer.com/html/xuejie/20070905/1059.html
[4] Ministry of Agriculture of P.R. China, Development Plan of Agricultural Biomass Power Generation (2007-2015), May 2007, http://www.agri.gov.cn/xxlb/P020070705456007024820.doc

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abovementioned, it is therefore concurred by the audit team that the development of other sources of renewable energy is not feasible.

Alternative 3 is therefore also not feasible.

Alternative 4 – There is no barrier in legal, financial, technical or any other aspects.

The most likely baseline scenario then remains to import electricity from the grid, i.e. Alternative 4, in which the power output equivalent to the proposed project generates would be supplied by CCPG where the proposed project is connected to. This alternative does not face any prohibitive barrier and be accepted as the baseline scenario.

This is reflected in the combined margin (CM), i.e. the weighted average of the operating margin (OM) emission factor and the build margin (BM) emission factor. According to AMS-I.D./ Version 12, a grid emission coefficient has been developed in the PDD for the power generation baseline scenario in accordance with ACM0002/ Version 06 as a combined margin emission coefficient. According to ACM0002/ Version 06, the default weights for the proposed project of 50% OM and 50% BM have been selected. The calculation of baseline emission factors of CCPG is based on the publication of the Office of National Coordination Committee on Climate Change (NC4), which is the subordinate of NDRC. Details will be further discussed in Section 4.6 – Calculation of GHG Emission.

The CCPG is dominated by coal-fired power plants, and it is considered likely that coal-fired power plants will continue to dominate the power sector due to the local availability of low-cost coal. It is expected that renewable capacity additions will not have significant effects on the mix of the CCPG during the crediting period.

The baseline determination is transparent and reasonable.

The system boundary is justified transparently and is presented as below:

	GHGs involved	**Description**
Baseline emissions	CO_2	Major emission source
Project emissions	--	No use of supplementary fossil fuel is noted during on-site visit Project power density is 293W/m^2, i.e. larger than 10W/m^2, and project emission is thus considered as zero.
Leakage	--	Considered negligible as per AMS-I.D.

4.4 Additionality

As per AMS-I.D./ Version 12, the project proponent has provided an explanation to show that the project activity would not have occurred anyway due to the following barrier:

Investment barrier

It is noted in the revised PDD that, the application of simple cost analysis & investment comparison analysis are excluded by the project proponent from the analysis. The selection of "benchmark analysis" for project financial assessment is justified in considering that, other

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than CDM revenue, the proposed project would generate revenue stream through sale of electricity to the provincial grid.

The audit team is also able to check up with the applied economic analysis reference, i.e. Economic Evaluation Code for Small Hydropower Projects (SL16-95), and in which it states that "the project is financially feasible only when the IRR is above or equal to benchmark IRR. The benchmark IRR for small-scale hydropower projects (<25MW) is 10% (after tax)".

The project's PDR also refers to that same document for the application of the financial rules for IRR calculations. The PDR was prepared in April 2004 by the Loudi Hydropower Design and Investigation Institute (LHDII), a class-II accredited entity in China for developing PDR by the Chinese Government. The PDR, being approved by the Hunan Provincial Water Resource Bureau on 15th July 2004, could also support that the applied assessment methodology is considerably valid. Besides, in viewing the popularity of adoption of this benchmark evaluation method in China's small hydropower industry, the application of benchmark analysis and the selected benchmark IRR is deemed appropriate for the proposed project.

The selected financial parameters (input values) for IRR calculation were checked by the audit team against the source reference documents to be valid. The calculation procedure in IRR spreadsheet is also verified by the audit team, which is calculated in accordance with the PDR, against the "Economic Evaluation Code for Small Hydropower Projects (SL16-95)", and is confirmed sound and reasonable. It is reflected from the benchmark analysis that, without the revenue from CDM, the project IRR would be 6.62%, which is below the benchmark of 10.0% in China for small hydropower industry, as defined within the "Economic Evaluation Code for Small Hydropower Projects (SL16-95)". Hence, the audit team concurred that the project cannot be considered as financially viable in the absence of CDM benefits, and Alternative 1 is not deemed a likely baseline scenario.

The IRR of the total investment of the proposed project would be improved in consideration of CERs revenue, where IRR of 11.30% shall be expected.

The following is an excerpt extracted from the PDR and presents the guideline documents referenced in the investment analysis which demonstrates that the inputs values adopted for the investment analysis are in accordance with appropriate guidelines and best available market information:

1. *《Economic assessment method and parameter of construction projects》;*
2. *《Economic Evaluation Code for Small Hydropower Projects (SL16-95)》;*
3. *《Economic Evaluation Code for Hydroenergy Projects (SL72-94)》;*
4. *《Hydroenergy Design Code for Small Hydropower Projects (GB50071-2002)》;*
5. *《Budget Estimation for Hydroenergy Design & Construction in Hunan Province》;*
6. *《Budget Estimation for Hydroenergy Equipments Installation for Small & Medium-Sized Hydropower Projects》;*
7. *《Engineering Cost in Shaoyang City》; & etc…*

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According to EB38 meeting, the audit team considers that the period of time between the finalization of the PDR (i.e. April 2004) and the investment decision (16th August 2004) is sufficiently short that it is unlikely in the context of the underlying project activity that the input values would have materially changed. Details on how key financial input values and the IRR calculation being independently checked by the audit team are presented below:

Item	Data & Source	Remarks on Validation of Parameters
Installed capacity:	9.6MW (PDR /10/ – Chapter 15, & Purchase contract of water turbines /18/)	3 units of 3.2MW rated output water turbines (model no.: HLA551-WJ-82) Total power = 3.2MW x 3 = 9.6MW Confirmed by site inspection, i.e. checking on equipments' identity plates and equipment supply contracts
Estimated annual grid-electricity:	28,100 MWh (PDR /10/ – Chapter 15)	Annual electricity generation = Installed capacity × annual operation hours = 9.6MW × 2,927hr/year ≅ 28,100MWh The audit team has checked the annual electricity generation is considered as valid provided that the operation hour could be correctly applied, as demonstrated below.
Operation hour	2,927 hr/a (PDR /10/ – Chapter 2 & 15)	It can be read from PDR Chapter 2.3, <Basic Hydrological Information>, where it indicates that the hydrological data applied in the project design are sourced from a nearest hydrology monitoring station located 13km downstream away from the Yuzitang project site. The records are being collected since 1959 to 1994, i.e. 35 years. From the records, the project designer obatined the averaged annual water flow and its fluctuation pattern. A model was then built to estimate the designed annual operation hour when determining the installed capacity. Several schemes with different capacity/operation hour parameters were offered in PDR, and the designer carried out a comparison analysis to select the most optimal one. The audit team can therefore reasonably trust that the designed operation hour of 2,927 hr/a is a reasonable statisic data obtained from scientific approach, which is

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		unlikely to have an substantial change in the project lifetime.
Project lifetime applied in financial analysis:	22 years (PDR /10/ – Chapter 15; & SL16-95 /40/)	This consists of 2 year of construction phase and 20 years of operation phase. The audit team has checked with the applied financial benchmark reference, i.e. SL16-95, where it allows the application of 20 years as project lifetime in the small-scale hydropower projects' economic analysis with the benchmark being set as 10%.
Total investment:	RMB 60.97 million Yuan (PDR /10/ – Chapter 15)	Total investment = capital investment + interest to be paid during construction period (interest rate of 5.76%) = 58.5839 million + 2.3911 million = 60.97 million The figures are checked by the audit team with the PDR to be valid. The calculation has also been discussed with the bank representative (Mr. Yuan Zhen-xuan /v/), who agreed the figures to be precise. Besides, it is noted by interview with the top management of project owner during on-site visit that the overall investment would even go beyond the stated amount due to the ever-increasing material, transportation & labour costs.
Electricity tariff	RMB 0.278 Yuan/kWh (incl. 6% VAT) (PDR /10/ – Chapter 15 & Tariff approval document from Dongkou County Development and Planning Bureau (Ref no.: DongjiFaZi [2004] (102) /44/)	Based on the PDR information and the official tariff approval document released by the Dongkou County Development and Planning Bureau on 6th August 2004 (Ref no.: DongjiFaZi [2004] (102)), the audit team can confirm that the feed-in tariff is RMB 0.278 Yuan/kWh (incl. 6% VAT) for the proposed project. The same has been applied in the IRR calculation. In addition, the audit team checked against the recent tariff approval notice and agreement notice issued by the Shaoyang City Price Bureau & Dongkou County Price Bureau respectively on 15th & 17th July 2008 /46 & 47/, that the executed tariff is finally approved as 0.26 RMB/kWh (incl. 6% VAT). Although these approval and

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		agreement notice issued in Year 2008 is irrelevant to the project investment decision making, as well as the project additionality discussion, the project team agrees that the documents effectively support to justify the financial assessment in PDD being conservative.
Tax:	Income tax (33%); Value added tax (6%); Construction surtax (1% of VAT); Education surtax (3% of VAT). (PDR /10/ – Chapter 15, & Relevant tax documents)	The applied tax rates are in line with the existing tax laws in China, which are checked by the audit team against the credible public information as below:-. Income tax rate – 33% (see Remark 1 below) http://opinion.people.com.cn/GB/8213/55724/55731/3881426.html Value added tax (VAT) rate – 6% http://www.js-n-tax.gov.cn/Page/StatuteDetail.aspx?StatuteID=1269 Construction surtax rate – 1% of VAT http://www.gov.cn/banshi/2005-08/19/content_24817.htm Education surtax – 3% of VAT http://www.gov.cn/gongbao/content/2005/content_91662.htm *[Remark 1: The known income tax rate is 33% during the time of finalization of PDR (April 2004) and decision making (16th August 2004), and the value of 33% has been applied in the IRR calculation. The audit team is able to confirm that the announcement of new income tax rate of 25% is made on 16th March 2007 and comes effective on 1st January 2008.]*
Annual operational cost:	1.20 million RMB/year (PDR /10/ – Chapter 15 & IRR calculation spreadsheet /36/)	The annual operational cost is calculated based on labour costs (salary & welfare), maintenance and repair expenses, etc, which does not include the initial investment costs, in accordance with the above PDR mentioned principles. All parameters were checked against the PDR (details in IRR table) and confirmed to be applied correctly. The operational cost was further reviewed

		during site interview with the project owner, where it is reported that the operational cost would be even higher than those predicted in the PDR due to the ever-increasing material, transportation & labour costs.

It is noted in the revised PDD that the discussion of sensitivity analysis has been carried out in the approach where it covers the justification on how unrealistic would the project IRR go beyond the benchmark under variation of four financial parameters, namely total investment, tariff, annual operation hour & annual O&M cost. From the IRR spreadsheet, the audit team notes that there shall need a fairly strong variation in the first three parameters for resulting the project IRR to reach the benchmark. Respectively, variation of –22.8%, +30.8% & +30.8% for the mentioned first three parameters shall result in the project IRR to reach the benchmark as 10.0%. In particular, it is worth to note that for annual O&M cost a variation of even –100.0% (i.e. zero O&M cost) shall not make the project IRR reaching the benchmark.

To pinpoint, the audit team has studied the ex-factory price index from the National Bureau of Statistics of China (*http://www.stats.gov.cn/tjsj/ndsj/2006/html/I0913e.HTM*) and learnt that there is an overall increase of 9.38% in the total industry products' price since 1998 to 2005. This increasing trend is considered likely to be continuing in developing country like China, and there is no sign to appear such a drastic drop to make a reduction of 22.8% in the total investment likely to happen.

For variation of tariff, an increase of 30.8% means a tariff of RMB 0.363 Yuan/kWh (incl. 6% VAT), equivalent to RMB 0.342 Yuan/kWh (excl. VAT), which is fairly unreachable as the highest approved tariff for small hydropower projects is RMB 0.315 Yuan/kWh (incl. 17% VAT), equivalent to RMB 0.269 Yuan/kWh (excl. VAT), in accordance with the tariff adjustment notification /45/ released by the Hunan Provincial Price Bureau in August 2004. Also, it is noted that the project tariff is being determined according to the official approval by the Provincial Price Bureau. According to the tariff reform guideline document released by NDRC on 28th March 2005 (Ref no.: FaGaiJiaGe [2005] (514)) (*http://www.ndrc.gov.cn/zcfb/zcfbtz/zcfbtz2005/t20050613_6670.htm*), the tariff determination shall take into account with the consideration from the government authority and market competition information, and shall be kept moderately stable. Besides, it is also noted from a recent announcement made by NDRC that the central government came to a decision to proactively get involved into control and stabilize the national price level (including tariff) in a steady and reasonable range by means of administrative measures, e.g. pricing strategy. According to a latest control measures announced by the State Council on 14th January 2008 regarding monitoring of the price control and management (*http://www.gov.cn/ldhd/2008-01/14/content_857704.htm*), the Vice-Premier (Mr. Zeng Peiyan) proclaimed to freeze the charges of public affairs which include the tariff. Since the tariff is such a sensitive issue which is always strictly monitored and controlled by the central and local government, the audit team agrees with the argument that the tariff is considered not likely to reach +30.8% in the near future.

For variation of annual operation hour, it is mentioned in the PDD that an increase of annual operation hour would be attributed to the increased water resource brought by the rainfall precipitation. However, it is reasonable not to expect an increase in such degree throughout

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the project lifetime. Besides, it can be read from PDR Chapter 2.3, <Basic Hydrological Information>, where it indicates that the hydrological data applied in the project design are sourced from a nearest hydrology monitoring station located 13km downstream away from the Yuzitang project site. The records are being collected since 1959 to 1994, i.e. 35 years, and represents a fairly localized statistical data of averaged annual water flow and its fluctuation parttern. In addition, the audit team is able to check against the China Electric Power Yearbooks (2004 to 2007) and observes that the average annual utilization hour of hydropower projects in China is 3,393hrs (3,313hrs in Hunan Province) in Year 2006; 3,664hrs (3,190hrs in Hunan Province) in Year 2005; 3,462 hrs (3,620hrs in Hunan Province) in Year 2004; and 3,239hrs in Year 2003. Considering the fairly stable utilization hours of hydropower projects, it is reasonable to believe that an increase of 30.8% (resulting [2,927hrs x (1+30.8%)] = 3,8291hrs) shall not likely to be occurred.

For variation of annual O&M cost, it is demonstrated in the sensitivity analysis that the project IRR is clearly not sensitive to the variation of this parameter. It is agreed by the audit team that the O&M cost of a hydropower project shall never be zero, thus it is unrealistic to assume the project IRR to be reaching the benchmark under variation of O&M cost.

The above arguments have been studied by the audit team that it is concurred to be unlikely for the project IRR to reach the benchmark under variation of those four selected financial parameters. Noticeable financial barrier is therefore observed in view of the absence of CDM revenue during the project implementation and cannot still reach the benchmark.

All in all, the investment analysis and sensitivity analysis have demonstrated that the project activity is unlikely to be the most financially attractive option.

In summary, all of the above described steps are convincingly followed and demonstrated within the documentation and the interviews. The proposed project activity is proven additional through investment analysis and is not likely the baseline scenario, and has illustrated the project's necessity for CDM in order to proceed further.

4.5 Monitoring

The project activity correctly applies the approved monitoring methodology AMS-I.D./ Version 12 titled "Grid connected renewable electricity generation" for the project activity. Applicability criteria of the monitoring methodology to the project activity are met as noted in Section 4.3.

Regarding the calculation of project emissions, since the project activity utilizes hydropower for electricity generation, no auxiliary fuels will be used and it is verified by the audit team during the on-site inspection. The project emission could therefore be regarded as zero.

All power generating equipments involved in the project is newly purchased, where purchasing contracts for those equipments are checked by the audit team to be showing that the equipments are bought from the equipment suppliers. There is no transfer of equipment from another activity and the project owner did not transfer any equipment to another activity

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because it is a new facility. According to the AMS-I.D/Version 12, no leakage is considered and is therefore assumed as zero.

The project activity will not generate any project emission nor leakage, monitoring of project emission and leakage is not required.

The monitoring will involve metering the electricity generated by individual turbines and the emission rates of the CCPG. The combined margin emission factor is determined *ex-ante* based on the most recent information available. Monitoring of GHG emission reduction is based on measuring the net quantity of electricity supplied to the CCPG, i.e. difference between imported and exported electricity, which is transparently presented in the PDD. The data will be counter-verified against the selling receipt from the grid. The PDD has made provisions in B.7 for full details in monitoring the GHG emissions reduction due to the project activity.

Monitoring of sustainable development indicators is not required by the China DNA. The environmental impacts are considered minor and will be monitored by the local environmental authority during the project lifetime. The project proponent has developed a project-specific "Handbook of Monitoring and Management for Yuzitang Hydropower Project", and is checked by the audit team to be valid. The monitoring plan of the proposed project includes the followings:-

- Identification of monitoring subjects;
- Establishment of operational and management structure;
- Monitoring apparatus and installment;
- Data monitoring;
- Quality Control;
- Disposing process of urgency and abnormity;
- Training programme

Detailed procedures have been developed and the implementation of these will enable subsequent verification of the project's emission reductions. The management team for monitoring of the project is identified in the PDD. Appropriate training has been provided to the management team and operation team for ensuring they are suitable and competent for carrying out the work.

4.6 Estimate of GHG Emissions

The GHG emissions calculations are transparently documented and appropriate assumptions regarding expected amount of electricity generated have been used to forecast emission reductions.

According to the selected methodology AMS-I.D / Version 12, the emission reduction (ER_y) by the project activity during the crediting period is the difference between the baseline emissions (BE_y), project emissions (PE_y) and emissions arising from leakage (L_y), with reference to ACM0002/ Version 06.

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Regarding the calculation of project emissions, since the project activity utilizes renewable hydro source for electricity generation, where no auxiliary fuels shall be used and it is verified by the audit team during on-site audit. The power density of project is 293W/m^2, i.e. greater than 10W/m^2, the project emission could therefore be regarded as zero.

It is noted during on-site visit that all energy generating equipments involved in the project is newly purchased, where purchasing contracts for those equipments are checked by the audit team to be showing that the equipments are bought from the equipment suppliers. There is no transfer of equipment from another activity and the project owner did not transfer any equipment to another activity because it is a new facility. According to the AMS-I.D./ Version 12, no leakage is considered and is therefore assumed as zero.

While the project emission & leakage are zero, the baseline emission are equal to the emission reductions due to the project activity and have been estimated to be 27,398 tCO_2e per year in the PDD, based on an *ex-ante* fixed baseline emission factor of 0.97504 tCO_2e/MWh.

The baseline emission factor for the project, using the combined margin (CM) approach, is fixed *ex-ante* during the crediting period. The default weights for the proposed project of 50% OM and 50% BM have been selected according to ACM0002/Version 06. For the calculation of OM emission factor, simple OM emission factor calculation method is chosen because low cost must run projects constitute less than 50% of the total grid generation and data is not available for applying the dispatch data analysis. The average emission factor for the grid for each fuel type is calculated *ex-ante* based on a 5-year full generation-weighted average of the most recent statistics available (data available from 2000 to 2004 derived from China Electric Power Yearbook and China Energy Statistical Yearbook at the time of PDD submission). Because plant specific fuel consumption and electricity generation data is not publicly available in China, a deviation of the baseline methodology of AM0005 (later replaced by ACM0002) approved by the EB (as detailed in the PDD) is adopted for using relevant emission data recently published by the DNA of P.R. China on 9th August 2007. The simple OM emission factor is calculated as 1.29086 tCO_2e/MWh and the BM emission factor as 0.65923 tCO_2e/MWh, resulting the CM be 0.97504 tCO_2e/MWh. Preciseness of the data was verified by the audit team during the on-site interview.

The *ex-ante* estimation of emission reductions is based on the estimated net electricity generation and the relevant baseline emissions and project emissions of the project, which is reasonably and transparently carried out.

4.7 Environmental Impacts

The environmental impacts of the project have been reported in the PDD, Section D. It is reported that the project activity is not expected to cause any significant environmental impacts. The environmental impacts of the project were sufficiently assessed by means of an Environmental Impact Assessment (EIA) study according to the China laws & regulations. The EIA Report, which is prepared by the Shaoyang Environmental Protection Research Centre in November 2006, has been approved by the Hunan Provincial Environmental Protection Bureau (EPB) on 26th December 2002 and is inspected by the audit team to be valid.

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No significant environmental impact is identified during the on-site assessment since relevant mitigation measures were properly implemented as stated in the EIA Study. The environmental protection measure is satisfied as confirmed by the interview with representative of local EPB and local villagers, i.e. Nuoxi Village. No environmental complaint on the proposed project is received.

Consensus on compensation arrangement for land acquisition has been reached between the project proponent and the local communities right after the project construction commencement in Year 2004. Compensation agreements were signed with the various affected local villages in November 2004. The signed agreements and land acquisition summary have been checked by the audit team to be valid. In addition, it is confirmed by the local residents & village committee representative during the stakeholder interview that the compensation arrangement is satisfied and the compensation payment has been released as scheduled.

4.8 Comments by Local Stakeholders

Although it is not a formal requirement by the current legislation of the host country to carry out a public consultation process, local stakeholders were invited for expressing their comments on the project implementation through open symposium and questionnaire survey in July to August 2006. 50 nos. of local stakeholders were consulted and most of the comments considered that the project would bring positive impacts to the local economy and livelihoods of local people with increased job opportunities and more stable power supply. The majority of them expressed their full support to the implementation of the project activity. All the comments were summarized and recorded in the PDD, Section E. Record evidence of the filled questionnaires is received from the project participants for the audit team's verification.

46 nos. of the returned public questionnaires (out of 50 nos. distributed) were received from the project owner for audit team's inspection. The audit team has read through the questionnaires and concurs the summary in Section E of PDD to be comprehensive. The stakeholder survey itself is also deemed appropriate as it reasonably covered the most affected people in the community, incl. residents from various villages, town government, county commission, environmental protection bureau, water resources bureau, etc. Moreover, groups from different background (e.g. gender, age, vocation and education level) were invited for giving comments. In particular, the surrounding of construction site and submerged area was identified as the highlighted spot for investigation.

The results of the questionnaire survey can be counter-confirmed with the general voices noticed from the on-site visit. Representatives from the local community were interviewed. In general, the interviewees show adequate understanding of the nature of the project and are satisfactory with the environmental mitigation arrangement. As confirmed by the government official from Dongkou County Development and Reform Commission during on-site audit, the citizens consider that the project would benefit the improvement in local social, economic and environmental development. The response is overall supportive to the project implementation. The questionnaires results are hence deemed representative.

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4.9 Comments by Parties, Stakeholders and NGOs

The PDD of 30th September 2007 was made publicly available on UNFCCC CDM website (*http://cdm.unfccc.int/Projects/Validation/DB/ACXPC3NVIAHGMQJ2X63UYRX9VZFTL2/view.html*) and parties, stakeholders and NGOs were through the CDM website invited to provide comments during a 30 days period from 21st October 2007 to 19th November 2007, where no comment was received.

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APPENDIX A

SMALL-SCALE CDM VALIDATION PROTOCOL

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SMALL-SCALE CDM VALIDATION PROTOCOL

INTRODUCTION

This document contains a generic Validation Protocol for small-scale CDM projects, which must be seen in conjunction with the Validation and Verification Guidelines and the Validation Report Template.

This validation protocol serves the following purposes:

- It organises, details and clarifies the requirements a project is expected to meet; and
- It ensures a transparent validation process by inducing the validator to document how a particular requirement has been validated and which conclusions have been reached;

This protocol contains two tables with generic requirements for validation projects. Table 1 shows the requirements that the GHG emission reduction project will be validated against. Table 2 consists of a checklist with validation questions related to one or more of the requirements in Table 1. The checklist questions may not be applicable for all investors, and should not be viewed as mandatory for all projects. Where a finding is issued, a corrective action request or clarification request are stated. The resolution and final conclusions of these requests should be described in Table 3 of this protocol.

Before this generic validation protocol can be applied to validate a specific project, the validator must review and adjust/amend the protocol to make it applicable to individual project characteristics and circumstances as well as individual investor criteria. The application of the validator's professional judgement and technical expertise should ensure that checklist amendments cover all necessary specific project requirements that have impact on project performance and acceptance of the project. Given the above, the checklist part of the protocol is neither exhaustive nor prescriptive.

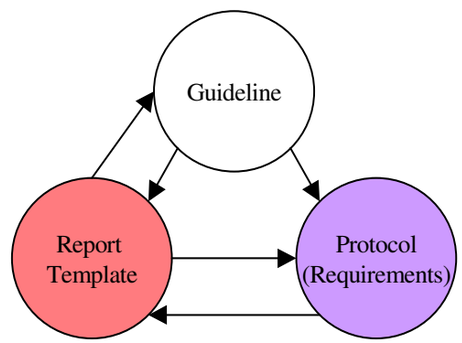

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Table 1 Mandatory Requirements for Small Scale Clean Development Mechanism (CDM) Project Activities

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/ Comment
1. The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3	Kyoto Protocol Art. 12.2	~~**CAR02**~~ OK (Refer to Table 3 below)	Table 2, Section E.4.1 Annex I Party is Sweden. Reference: www.unfccc.net **CAR02** The information of project participant in A.3 & Annex I of PDD are shown inconsistently. Please revise accordingly.
2. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof	Kyoto Protocol Art. 12.2, Simplified Modalities and Procedures for Small Scale CDM Project Activities §23a	~~**CAR01**~~ OK (Refer to Table 3 below)	Table 2, Section A.3 **CAR01** The LoAs from DNA of P.R. China & Sweden are not yet available for inspection. Please accordingly obtain and submit to the audit team for verification.
3. The project shall assist non-Annex I Parties in contributing to the ultimate objective of the UNFCCC	Kyoto Protocol Art. 12.2.	OK	Table 2, Section E.4.1
4. The project shall have written approval of voluntary participation from the designated national authorities of each party involved	Kyoto Protocol Art. 12.5a, Simplified Modalities and Procedures for Small Scale CDM Project Activities §23a	~~**CAR01**~~ OK (Refer to Table 3 below)	Approval of voluntary participation from the China DNA & Sweden DNA is not received.

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REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/ Comment
5. The emission reductions should be real, measurable and give long-term benefits related to the mitigation of climate change	Kyoto Protocol Art. 12.5b	OK	Table 2, Section E.1 to E.4
6. Reduction in GHG emissions must be additional to any that would occur in absence of the project activity, i.e. a CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity	Kyoto Protocol Art. 12.5.c, Simplified Modalities and Procedures for Small Scale CDM Project Activities §26	OK	Table 2, Section B.2.1
7. Potential public funding for the project from Parties in Annex I shall not be a diversion of official development assistance	Marrakech Accords (Decision 17/CP.7)	~~**CL01**~~ OK (Refer to Table 3 below)	The review of documents and the interviews during the on-site assessment showed that no ODA is used for the project financing or the proposed project. **CL01** Bank loan records and financial audit reports should be provided to audit team for verification of project financial condition.
8. Parties participating in the CDM shall designate a national authority for the CDM	Marrakesh Accords (CDM modalities§ 29)	OK	China DNA – National Development and Reform Commission (NDRC); Sweden DNA –Swedish Energy Agency, Department of Energy system

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REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/ Comment
			Analysis and Climate Change.
9. The host country shall be a Party to the Kyoto Protocol	Marrakesh Accords (CDM modalities§ 30)	OK	China Ratified the Kyoto Protocol on 30th August 2002; Sweden ratified the Kyoto Protocol on 31st May 2002.
10. The proposed project activity shall meet the eligibility criteria for small scale CDM project activities set out in § 6 (c) of the Marrakesh Accords and shall not be a debundled component of a larger project activity	Simplified Modalities and Procedures for Small Scale CDM Project Activities §12a,c	OK	Table 2, Section A.1 There is no other hydro power project within 1 km of the project.
11. The project design document shall conform with the Small Scale CDM Project Design Document format	Simplified Modalities and Procedures for Small Scale CDM Project Activities, Appendix A	OK	
12. The proposed project activity shall confirm to one of the project categories defined for small scale CDM project activities and uses the simplified baseline and monitoring methodology for that project category	Simplified Modalities and Procedures for Small Scale CDM Project Activities §22e	OK	Table 2, Section A.1.3 and B.1 The project category is Type I.D. – Grid connected renewable electricity generation.
13. Comments by local stakeholders are invited, and a summary of these provided	Simplified Modalities and Procedures for Small Scale CDM Project Activities §22b	OK	Table 2, Section G Stakeholders' questionnaire survey was carried out in August 2005; Public notification was made in October 2005.

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REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/ Comment
14. If required by the host country, an analysis of the environmental impacts of the project activity is carried out and documented	Simplified Modalities and Procedures for Small Scale CDM Project Activities §22c	OK	Table 2, Section F EIA Report was prepared by the Shaoyang Environmental Protection Research Centre in November 2006.
15. Parties, stakeholders and UNFCCC accredited NGOs have been invited to comment on the validation requirements and comments have been made publicly available	Simplified Modalities and Procedures for Small Scale CDM Project Activities §23b,c,d	OK	PDD was published for invitation of comments at UNFCCC CDM website for a 30-days period from 21st October 2007 to 19th November 2007. No comment was received.

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Table 2 Requirements Checklist

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
A. Project Description The project design is assessed.					
A.1. Small scale project activity It is assess whether the project qualifies as small scale CDM project activity.					
A.1.1. Does the project qualify as a small scale CDM project activity as defined in paragraph 6 (c) of decision 17/CP.7 on the modalities and procedures for the CDM?	PDD	DR	Yes. The Yuzitang project is a small hydroelectric project, where the installed capacity is 9.6 MW with expected net output of 28,100 MWh per year to the CCPG.	OK	OK
A.1.2. The small scale project activity is not a debundled component of a larger project activity?	PDD	DR, I	As confirmed and reported during the on-site visit, this project is not a de-bundled component of a larger project activity.	OK	OK
A.1.3. Does proposed project activity confirm to one of the project categories defined for small scale CDM project activities?	PDD	DR	Yes. This project is a grid-connected renewable power generation project activity which meets all the application criteria stated in the methodology AMS-I.D.. Therefore, the project confirms to SSC category I.D – Grid connected renewable electricity generation.	OK	OK

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
A.2. Project Design Validation of project design focuses on the choice of technology and the design documentation of the project.					
A.2.1. Are the project's spatial (geographical) boundaries clearly defined?	PDD	DR	Yes. The project spatial boundaries have been defined and are described in A.4 of PDD. **CAR03** The demarcation of the proposed project in A.4.1.4. of PDD is not detail enough to clearly identify the project location. Please revise the demarcation with site-specific coordinates for clear identification of project location.	~~CAR03~~	OK (Refer to Table 3 below)
A.2.2. Are the project's system (components and facilities used to mitigate GHG's) boundaries clearly defined?	PDD	DR, I	Yes. The project' system boundaries are clearly defined. The project boundary is limited to project site, and the grid electricity system boundary is defined as the CCPG which includes the Henan, Hubei, Hunan, Jiangxi, Sichuan provincial grids & Chongqing municipal grid.	OK	OK
A.2.3. Does the project design engineering reflect current good practices?	PDD PDR FSR	DR, I	The technical specifications have been provided to the audit team for inspection. The FSR was prepared by the Hunan Provincial Hydropower Design and Investigation Institute in July 2002. The technology used for the project reflects current good practices where renewable hydro resource would be utilized for clean power generation.	~~CL02~~	OK (Refer to Table 3 below)

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			CL02 It is illustrated in the PDD that the proposed project is a run-of-river type low water head hydropower project. However as observed during on-site visit, the project is a diversion type hydropower project with the water-flow diverted to the power generation units through a 3-km tunnel with the water head of approximately 60m. Please clarify and accordingly revise the incorrect parts of the PDD. In addition, please further revise the Table 2 of PDD to include those much related key technical parameters, e.g. dam height, etc.		
A.2.4. Will the project result in technology transfer to the host country?	PDD	DR, I	No technology is transferred from other countries to this project activity.	OK	OK
A.2.5. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period? Does the project make provisions for meeting training and maintenance needs?	PDD	DR, I	Yes. The whole training program contains the CDM knowledge, the operational regulations, the quality control (QC) standard flows, the data recording requirements and the management rules.	OK	OK
A.3. Contribution to Sustainable Development The project's contribution to sustainable development is assessed					
A.3.1. Will the project create other environmental or social benefits than GHG emission reductions?	PDD	DR, I	Several more benefits would be expected, which includes improvement in the local electricity generation, local traffic, economy, overall social	~~**CL04**~~	OK (Refer to Table 3

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			development and local employment condition. **CL04** Please provide details in PDD with supporting documents for the claims of creating new employment opportunities in project construction & implementation phases.		below)
A.3.2. Will the project create any adverse environmental or social effects?	PDD FSR EIA	DR, I	After on-site audit and review of EIA Report, minimal impact to the environment was observed, where specific control measures is adopted by the project owner as suggested in the EIA Report.	OK	OK
A.3.3. Is the project in line with sustainable development policies of the host country?	PDD LoA	DR, I	**CAR01** The LoA from DNA of P.R. China is not yet available for confirming the achievement of sustainable development. Please accordingly obtain and submit to the audit team for verification.	~~**CAR01**~~	OK (Refer to Table 3 below)
A.3.4. Is the project in line with relevant legislation and plans in the host country?	PDD EIA	DR, I	Yes. An EIA was conducted according to China's environmental regulations, and was approved by the Hunan Provincial EPB on 26th December 2002.	OK	OK

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B. **Project Baseline** The validation of the project baseline establishes whether the selected baseline methodology is appropriate and whether the selected baseline represents a likely baseline scenario.					
B.1. Baseline Methodology It is assessed whether the project applies an appropriate baseline methodology.					
B.1.1. Is the selected baseline methodology in line with the baseline methodologies provided for the relevant project category?	PDD	DR, I	The approved methodology AMS-I.D./Version 12 – "Grid connected renewable electricity generation" has been considered in accordance with simplified baseline and monitoring methodologies for selected CDM projects - Appendix B.	OK	OK
B.1.2. Is the baseline methodology applicable to the project being considered?	PDD	DR, I	Yes. The adopted methodology AMS-I.D./ Version 12 is applicable to a hydropower plant, i.e. a renewable energy source, with an installed capacity under the threshold of 15MW.	OK	OK
B.2. Baseline Determination It is assessed whether the project activity itself is not a likely baseline scenario and whether the selected baseline represents a likely baseline scenario.					
B.2.1. Is it demonstrated that the project activity itself is not a likely baseline scenario due to the existence of one or more of the following barriers: investment barriers, technology barriers, barriers due to prevailing practice or	PDD	DR, I	**CL05** The determination of alternatives for baseline scenario is considered not comprehensive enough. Project proponent is requested to review and revise	~~**CL05**~~ ~~**CL06**~~ ~~**CL07**~~ ~~**CL08**~~	OK (Refer to Table 3 below)

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
other barriers?			the justification, so as to take into account of the consideration of legal requirements, financial barrier, other natural renewable resource availability, etc. **CL06** It is understood that the China government has already announced that the revenue tax shall be decreased from 33% to 25% starting Year 2008, please clarify for the influence to the overall project finance. **CL07** It is noted from the PDD that "Benchmark Analysis" has been chosen for project financial assessment. However, no justification of applicability of the analysis option is duly provided. Please clarify. In addition, it is required by the "Economic Evaluation Code for Small Hydropower Projects (SL16-95)" that the financial analysis should be carried out based on 20 years, where the project proponent adopted 30 years in the analysis. Please clarify. **CL08** Please provide the primary source reference for verification of financial indicators listed in Table 5 of B.5 in PDD. In addition, please provide explanation for the selection of those chosen parameters. **CL09**	~~CL09~~ ~~CL10~~	

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			Please provide justification on the selection of parameters and fluctuation range in the Sensitivity Analysis. The analysis is considered not comprehensive enough to reasonably cover those parameters which are anticipated to probably be fluctuating throughout the project period, e.g. electricity price, O&M cost, operating hours, etc. **CL10** Please provide evidence documents for demonstrating the claims of refusal on loan application by the bank.		
B.2.2. Is the application of the baseline methodology and the discussion and determination of the chosen baseline transparent and conservative?	PDD	DR, I	The average of the OM and BM is selected as baseline in a transparent and conservative manner.	OK	OK
B.2.3. Are relevant national and/or sectoral policies and circumstances taken into account?	PDD	DR, I	Yes.	OK	OK
B.2.4. Is the baseline selection compatible with the available data?	PDD	DR, I	Yes. Calculation of OM and BM is compatible with the data available from China Electric Power Yearbook 2001 – 2006.	OK	OK
B.2.5. Does the selected baseline represent the most likely scenario describing what would have occurred in absence of the project activity?	PDD	DR, I	**CL05** The determination of alternatives for baseline scenario is considered not comprehensive enough.	~~**CL05**~~	OK (Refer to Table 3

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			Project proponent is requested to review and revise the justification, so as to take into account of the consideration of legal requirements, financial barrier, other natural renewable resource availability, etc.		below)
C. **Duration of the Project / Crediting Period** It is assessed whether the temporary boundaries of the project are clearly defined.					
C.1.1. Are the project's starting date and operational lifetime clearly defined?	PDD	DR, I	Yes. The starting date of the project activity is 16th August 2004. The expected operational lifetime of the project activity is 30 years. **CL03** Please demonstrate in the PDD the project history since the consideration of CDM implementation by the project developer until the latest project status with supporting documents. Also, please clearly clarify for the starting date of project activity reported in C.1.1 of PDD, as the starting date of project activity should be the earliest of the dates at which the implementation or construction or real action of the project activity began.	~~CL03~~	OK (Refer to Table 3 below)
C.1.2. Is the crediting period clearly defined (seven years with two possible renewals or 10 years with no renewal)?	PDD	DR, I	Yes, the starting date of crediting period is 1st November 2008 with 7 years. **CL03** In addition, the starting date of crediting period is	~~CL03~~	OK (Refer to Table 3 below)

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			stated as 1st January 2008, which is deemed not realistic in temporal consideration. Please revise.		
D. **Monitoring Plan** The monitoring plan review aims to establish whether all relevant project aspects deemed necessary to monitor and report reliable emission reductions are properly addressed.					
D.1. Monitoring Methodology It is assessed whether the project applies an appropriate monitoring methodology.					
D.1.1. Is the selected monitoring methodology in line with the monitoring methodologies provided for the relevant project category?	PDD	DR, I	Yes, same as the choice of baseline methodology in B.1.1. & B.1.2. The monitoring methodology is – "metering the electricity generated by the renewable technology" as indicated in Appendix B of simplified modalities and procedures for small-scale projects.	OK	OK
D.1.2. Is the monitoring methodology applicable to the project being considered?	PDD	DR, I	Idem	OK	OK
D.1.3. Is the application of the monitoring methodology transparent?	PDD	DR, I	Yes. Direct metering to be applied for monitoring of electricity generated by the project activity is considered transparent.	OK	OK
D.1.4. Will the monitoring methodology give opportunity for real measurements of achieved emission reductions?	PDD	DR, I	Yes. Real measurements can be acquired by keeping the selling and purchasing receipts and preparing a monitoring report at the end of each year, which includes the on-grid electricity quantity monitoring files, the verification files, the emission	OK	OK

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			reduction evaluation files and the records on monitoring apparatus' repairs and tests.		
D.2. Monitoring of Project Emissions It is established whether the monitoring plan provides for reliable and complete project emission data over time.					
D.2.1. Are the choices of project emission indicators reasonable?	PDD	DR	**CL13** Please provide the calculation of power density of the proposed project, including reference source of submerged area information, for verification of project emission.	~~**CL13**~~	OK (Refer to Table 3 below)
D.2.2. Will it be possible to monitor / measure the specified project emission indicators?	PDD	DR	Not applicable	OK	OK
D.2.3. Do the measuring technique and frequency comply with good monitoring practices?	PDD	DR	Not applicable	OK	OK
D.2.4. Are the provisions made for archiving project emission data sufficient to enable later verification?	PDD	DR	Not applicable	OK	OK
D.3. Monitoring of Leakage It is assessed whether the monitoring plan provides for reliable and complete leakage data over time.					
D.3.1. If applicable, are the choices of leakage indicators reasonable?	PDD	DR	With reference to Para. 8, Appendix B, small-scale CDM project activity modalities, leakage calculation is only required if the renewable energy technology	~~**CL14**~~	OK (Refer to Table 3

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			equipment is transferred from another activity. The equipment of Yuzitang project is not transferred from another activity and therefore no leakage calculation is required. **CL14** Please clarify for the justification of leakage consideration in the emission reduction estimation, in accordance with the AMS-I.D./ Version 12 but not ACM0002 as stated in B.6.1. of PDD.		below)
D.3.2. If applicable, will it be possible to monitor / measure the specified leakage indicators?	PDD	DR	Not applicable	OK	OK
D.3.3. If applicable, do the measuring technique and frequency comply with good monitoring practices?	PDD	DR	Not applicable	OK	OK
D.3.4. If applicable, are the provisions made for archiving leakage data sufficient to enable later verification?	PDD	DR	Not applicable	OK	OK
D.4. Monitoring of Baseline Emissions It is established whether the monitoring plan provides for reliable and complete project emission data over time.					
D.4.1. Is the choice of baseline indicators, in particular for baseline emissions, reasonable?	PDD	DR	**CL11** Some sections of the content in the "Handbook of Monitoring and Management for Yuzitang Hydropower Project" are found inconsistent with the	~~**CL11**~~	OK (Refer to Table 3 below)

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			practical condition as revealed on-site, e.g. management and usage of monitoring logsheet, metering flow diagram, etc. Please according revise the handbook to reflect the exact operation and submit to the audit team for verification.		
D.4.2. Will it be possible to monitor / measure the specified baseline emission indicators?	PDD	DR, I	Yes. In addition to the continuous metering, the project owner shall keep the selling and purchasing receipts and prepare a monitoring report at the end of each year, which including the on-grid electricity quantity monitoring files, the verification files, the emission reduction evaluation files and the records on monitoring apparatus' repairs and tests. **CL12** There is no auxiliary electricity meter installed at the project location for back-up monitoring purpose, which is inconsistent with the information reflected in the PDD. Please clarify if the provision of auxiliary electricity meter is mandatorily required. If so, please accordingly demonstrate to the audit team in the aid of flow diagram for the concerned installation with supporting evidence. Or, if not, revise the relevant sections of PDD to reflect the practical setup of on-site monitoring system.	~~CL12~~	OK (Refer to Table 3 below)
D.4.3. Do the measuring technique and frequency comply with good monitoring practices?	PDD	DR, I	Yes.	OK	OK
D.4.4. Are the provisions made for archiving baseline	PDD	DR, I	Yes. The monitoring data shall be kept for 9 years,	OK	OK

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
emission data sufficient to enable later verification?			i.e. first crediting period + 2 years.		
D.5. Project Management Planning It is checked that project implementation is properly prepared for and that critical arrangements are addressed.					
D.5.1. Is the authority and responsibility of project management clearly described?	PDD	DR, I	Yes. The project proponent Shaoyang Triumph Billion Yuzitang Power station Development Ltd, Co. (STBY) is responsible for the project operation, maintenance, monitoring and reporting.	OK	OK
D.5.2. Is the authority and responsibility for registration monitoring measurement and reporting clearly described?	PDD	DR, I	The monitoring organization chart in PDD B.7.2 clearly provides a description of the single responsibility of the relevant party.	OK	OK
D.5.3. Are procedures identified for training of monitoring personnel?	PDD	DR, I	Yes, as reported during on-site audit, the training of monitoring personnel was provided by the manufacturers since the end of Year 2006.	OK	OK
D.5.4. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	PDD	DR, I	Reference – "Handbook of Monitoring and Management for Yuzitang Hydropower Project".	OK	OK
D.5.5. Are procedures identified for calibration of monitoring equipment?	PDD	DR, I	Idem	OK	OK
D.5.6. Are procedures identified for maintenance of monitoring equipment and installations?	PDD	DR, I	Idem	OK	OK

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
D.5.7. Are procedures identified for monitoring, measurements and reporting?	PDD	DR, I	Idem	OK	OK
D.5.8. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	PDD	DR, I	Idem	OK	OK
D.5.9. Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	PDD	DR, I	Idem	OK	OK
D.5.10. Are procedures identified for internal audits of GHG project compliance with operational requirements as applicable?	PDD	DR, I	Idem	OK	OK
D.5.11. Are procedures identified for project performance reviews?	PDD	DR, I	Idem	OK	OK
D.5.12. Are procedures identified for corrective actions?	PDD	DR, I	Idem	OK	OK
E. **Calculation of GHG emission** It is assessed whether all material GHG emission sources are addressed and how sensitivities and data uncertainties have been addressed to arrive at conservative estimates of projected emission reductions.					
E.1. Project GHG Emissions The validation of predicted project GHG emissions focuses on transparency and completeness of calculations.					
E.1.1. Are all aspects related to direct and indirect project emissions captured in the project	PDD	DR, I	**CL13** Please provide the calculation of power density of	~~**CL13**~~	OK (Refer to

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
design?			the proposed project, including reference source of submerged area information, for verification of project emission.		Table 3 below)
E.1.2. Have all relevant greenhouse gases and sources been evaluated?	PDD	DR	Not applicable	OK	OK
E.1.3. Do the methodologies for calculating project emissions comply with existing good practice?	PDD	DR	Not applicable	OK	OK
E.1.4. Are the calculations documented in a complete and transparent manner?	PDD	DR	Not applicable	OK	OK
E.1.5. Have conservative assumptions been used?	PDD	DR	Not applicable	OK	OK
E.1.6. Are uncertainties in the project emissions estimates properly addressed?	PDD	DR	Not applicable	OK	OK
E.2. Leakage It is assessed whether there leakage effects, i.e. change of emissions which occurs outside the project boundary and which are measurable and attributable to the project, have been properly assessed.					
E.2.1. Are leakage calculation required for the selected project category and if yes, are the relevant leakage effects assessed?	PDD	DR	With reference to Para. 8, Appendix B, small-scale CDM project activity modalities, leakage calculation is only required if the renewable energy technology equipment is transferred from another activity. The equipment of Yuzitang project is not transferred from another activity and therefore no leakage calculation is required.	~~CL14~~	OK (Refer to Table 3 below)

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			CL14 Please clarify for the justification of leakage consideration in the emission reduction estimation, in accordance with the AMS-I.D./ Version 12 but not ACM0002 as stated in B.6.1. of PDD.		
E.2.2. Are potential leakage effects properly accounted for in the calculations (if applicable)?	PDD	DR	Not applicable	OK	OK
E.2.3. Do the methodologies for calculating leakage comply with existing good practice (if applicable)?	PDD	DR	Not applicable	OK	OK
E.2.4. Are the calculations documented in a complete and transparent manner and (if applicable)?	PDD	DR	Not applicable	OK	OK
E.2.5. Have conservative assumptions been used (if applicable)?	PDD	DR	Not applicable	OK	OK
E.2.6. Are uncertainties in the leakage estimates properly addressed (if applicable)?	PDD	DR	Not applicable	OK	OK
E.3. Baseline GHG Emissions The validation of predicted baseline GHG emissions focuses on transparency and completeness of calculations.					
E.3.1. Are the baseline emission boundaries clearly defined and do they sufficiently cover sources for baseline emissions?	PDD	DR, I	Yes. The hydropower plant and the CCPG were defined as the system boundary. All the power plants under the CCPG are covered.	OK	OK

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
E.3.2. Are all aspects related to direct and indirect baseline emissions captured in the project design?	PDD	DR, I	All the direct baseline emissions were captured.	OK	OK
E.3.3. Have all relevant greenhouse gases and sources been evaluated?	PDD	DR, I	Yes.	OK	OK
E.3.4. Do the methodologies for calculating baseline emissions comply with existing good practice?	PDD	DR, I	Yes. The methodology complies with the SSC category I.D. project activities.	OK	OK
E.3.5. Are the calculations documented in a complete and transparent manner?	PDD	DR, I	Yes. The calculation is done in a transparent manner.	OK	OK
E.3.6. Have conservative assumptions been used?	PDD	DR, I	Yes. The justification for selecting the average plant efficiency is reasonable.	OK	OK
E.3.7. Are uncertainties in the baseline emissions estimates properly addressed?	PDD	DR, I	Yes.	OK	OK
E.4. Emission Reductions Validation of baseline GHG emissions will focus on methodology transparency and completeness in emission estimations.					
E.4.1. Will the project result in fewer GHG emissions than the baseline case?	PDD	DR	Yes. The estimated emission reduction is 27,398 tCO_2e per annum over the first 7-years crediting period from November 2008 to October 2015. **CL15**	~~CL15~~	OK (Refer to Table 3 below)

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			It is noted that the starting date of crediting period is selected as 1st January 2008, which is however deemed to be not realistic in temporal consideration. Please therefore review for the adjustment of estimated emission reduction during the crediting period, i.e. A.4.3. & B.6.4. of PDD. Also, please substantiate for the stated hours of operation and efficiency of water turbines & generators in the influence to the whole electricity generation setup.		
F. **Environmental Impacts** It is assessed whether environmental impacts of the project are sufficiently addressed.					
F.1.1. Does host country legislation require an analysis of the environmental impacts of the project activity?	PDD	DR, I	An EIA was conducted as required by the China's Law and Regulations. The summary was revealed in Section D of the PDD.	OK	OK
F.1.2. Does the project comply with environmental legislation in the host country?	PDD	DR, I	Yes. The EIA Report has been approved by the Hunan Provincial EPB on 26th December 2002.	OK	OK
F.1.3. Will the project create any adverse environmental effects?	PDD	DR, I	With reference to the approval letter from the Hunan Provincial EPB, the project is unlikely to have significant environmental impacts.	OK	OK
F.1.4. Have environmental impacts been identified and addressed in the PDD?	PDD	DR, I	Yes. Refer to Section D of PDD.	OK	OK

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
G. **Comments by Local Stakeholder** Validation of the local stakeholder consultation process.					
G.1.1. Have relevant stakeholders been consulted?	PDD	DR, I	The project proponent has performed a formal consultation process with local stakeholders through open symposium and questionnaire survey. **CL16** Please provide all of the returned stakeholder questionnaires to the audit team for checking and verification. In addition, please clarify for the scale of questionnaire survey, as it is reported in Section E of the PDD ambiguously that 20 persons were consulted with 50 nos. of questionnaires distributed and 46 nos. returned. **CL17** Please clarify and reflect in the PDD for the background of stakeholders consulted and how were they being identified for carrying out the questionnaire survey.	~~CL16~~ ~~CL17~~	OK (Refer to Table 3 below)
G.1.2. Have appropriate media been used to invite comments by local stakeholders?	PDD	DR, I	Idem.	~~CL16~~ ~~CL17~~	OK (Refer to Table 3 below)
G.1.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried	PDD	DR, I	Not required.	OK	OK

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out in accordance with such regulations/laws?					
G.1.4. Is a summary of the comments received provided?	PDD	DR, I	Yes. A summary was prepared and was reviewed by the audit team.	OK	OK
G.1.5. Has due account been taken of any comments received?	PDD	DR, I	There were no major negative comments received in general and the local community gave strong positive comments on the project.	OK	OK

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Table 3 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
CAR01 The LoAs from DNA of P.R. China & Sweden are not yet available for inspection. Please accordingly obtain and submit to the audit team for verification.	Table 1 A.3.3.	Both the HCA and LoA are obtained, and provided to DOE for inspection.	OK LoAs from China DNA (NDRC) & Sweden DNA (Swedish Energy Agency) are received on 29th January 2008 & March 2008 respectively. The CAR is therefore resolved and closed.
CAR02 The information of project participant in A.3 & Annex I of PDD are shown inconsistently. Please revise accordingly.	Table 1	The information of PP in PDD is adjusted to be consistent with each other.	OK The information of project participants is revised and is consistent in A.3 & Annex I of PDD. The CAR is therefore resolved and closed.
CAR03 The demarcation of the proposed project in A.4.1.4. of PDD is not detail enough to clearly identify the project location. Please revise the demarcation with site-specific coordinates for clear identification of project location.	A.2.1.	The further identification information of project location is provided in the revised PDD.	OK The proposed project has been clearly indicated in PDD with a project-specific geographic coordinates which has been checked by the audit team to be accurate.

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
			The CAR is therefore resolved and closed.
CL01 Bank loan records and financial audit reports should be provided to audit team for verification of project financial condition.	Table 1	Both bank loan records and auditing reports are submitted to auditors for verification.	OK The bank loan record and auditing report have been received from project participant for checking. The validation did not reveal any information that indicates that the project can be seen as a diversion of official development assistance (ODA) funding towards China. The project is co-funded by private China-based and Hong Kong-based investors in a way that the China-based investors share 53.91% of the registered capital, and is responsible for the overall project management. Whilst, the Hong Kong-based investor shares 46.09%, and does not involve in any part of the power plant operation. The project proponent raises it own funding from internal accrual and loans from banks, i.e. Industrial and Commercial Bank of China (Dongkou Branch). The re-structure of project owner's company financial constitution is approved by the Shaoyang Municipal Bureau of Commerce on 14th August 2007 (Ref

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
			no.: ShaoShiShangWuWaiZiShenZi [2007] (016)), and is verified by the audit team to be valid. The CL is therefore resolved and closed.
CL02 It is illustrated in the PDD that the proposed project is a run-of-river type low water head hydropower project. However as observed during on-site visit, the project is a diversion type hydropower project with the water-flow diverted to the power generation units through a 3-km tunnel with the water head of approximately 60m. Please clarify and accordingly revise the incorrect parts of the PDD. In addition, please further revise the Table 2 of PDD to include those much related key technical parameters, e.g. dam height, etc.	A.2.3.	From on-site visit, it is found that the proposed project is of diversion type, and thus the relevant description parts in PDD are revised accordingly, including the key technical parameters in table 2.	OK The incorrect parts of PDD have been revised according to the actual condition. The proposed project is indicated as a diversion type hydropower project. Table 2 has also been revised to reflect those key technical parameters and data. The CL is therefore resolved and closed.
CL03 Please demonstrate in the PDD the project history since the consideration of CDM implementation by the project developer until the latest project status with supporting documents. Also, please clearly clarify for	C.1.1. C.1.2.	The history table is provided in the updated PDD, which contains the whole process of the project implementation in. The issuance date of project construction approval is the earliest one	OK Project history has been included in the revised PDD to transparently demonstrate the project development. It is noted that the starting date of project activity has been revised to 16th August

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
the starting date of project activity reported in C.1.1 of PDD, as the starting date of project activity should be the earliest of the dates at which the implementation or construction or real action of the project activity began. In addition, the starting date of crediting period is stated as 1st January 2008, which is deemed not realistic in temporal consideration. Please revise.		among suggested, which is indicated in the history table. The starting date of crediting period is revised to be 1st November 2008. More evidence document is provided to illustrate the process of considering CDM as key of project implementation, which is provided to DOE for inspection.	2004 (i.e. signing date of project construction approval), which is confirmed by the audit team to be the earliest of the dates at which the implementation or construction or real action of the project activity began. The audit team is also able to check against the directorial meeting minutes dated 4th May & 12th June 2004, where during the meeting the CDM incentive has been introduced by the Financial Director (Mr Chen Hai-dong) that the CDM income has been seriously considered prior to project implementation in order to implement the Yuzitang project owing to the encountered financial obstacles. Subsequent CDM service has been sought from the Hunan Sci & Tech Information Research Institute (HNSTI) for solid CDM development. LoI dated 8th July 2004 has been checked by the audit team. It is therefore confirmed that CDM has been readily considered before decision making in project proceeding.

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
			The crediting period is postponed to 1st November 2008 in the revised PDD, which is considered much realistic in temporal consideration. The CL is therefore resolved and closed.
CL04 Please provide details in PDD with supporting documents for the claims of creating new employment opportunities in project construction & implementation phases.	A.3.1.	There is no doubt that project construction needs labors, and creates employments for local residents. The man-day data applied is quantified in PDD, which source from PDR. And the work opportunities the project could bring in operation phase are stated in the document referred in the footnote 4 & 5 of PDD. The number of employees plan to be hired in PDR is 10.	OK It is reported that there would be 237,900 man-days employed for the project construction. This is confirmed with the PDR information. In addition, it is reported that totally there shall be 10 people being employed during the operation phase. Respectively, there shall be 5 management staff & 5 operation staff. The CL is therefore resolved and closed.
CL05 The determination of alternatives for baseline scenario is considered not comprehensive	B.2.1. B.2.5.	The discussion part of alternatives is revised to be more comprehensive. For alternative 1, it is unfeasible due to	OK Discussion on the alternative scenario of construction of renewable power

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
enough. Project proponent is requested to review and revise the justification, so as to take into account of the consideration of legal requirements, financial barrier, other natural renewable resource availability, etc.		financial barrier; for alternative 2, it is forbidden by national industrial regulations; for alternative 3, it is unfeasible due to shortage of local natural renewable resources except hydropower. Only alternative 4 is a possible baseline scenario.	plant is provided in the revised PDD. By referring to the information references provided by the project proponent sourced from <Energy Dictionary> p.392 (i.e. China solar energy distribution) & p.413 (i.e. China wind energy distribution), it is agreed by the audit team that the project location is lack of solar and wind resource for power generation in a similar project scale. Where there is also no utilizable geothermal resource available locally according to the information source from Energy Management Net, such power generation development is also not feasible. The audit team can also confirm by referring to the document released by the Ministry of Agriculture of P.R. China dated May 2007, that the biomass power generation technology is still relatively immature in China and the development cost is rather high. In addition, there is no reasonably effective encouragement policy from the State for promoting long-term

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
			biomass power generation development in the aspects of project finance, marketing or even the relevant legal system. All in all, the biomass energy development is not readily feasible unless special financial aid is present. Besides, the audit team has also confirmed with the Director of Dongkou County DRC, i.e. Mr Xie Xiong /i/, during on-site interview that the development cost in Hunan Province in solar PV power generation is high and not attractive in view of business development. And due to the inadequate wind and biomass resource for power generation, wind and biomass power plant could not provide comparable output as the proposed project does. Based on the abovementioned, it is therefore concurred by the audit team that the development of other sources of renewable energy is not feasible. The CL is therefore resolved and closed.

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
CL06 It is understood that the China government has already announced that the revenue tax shall be decreased from 33% to 25% starting Year 2008, please clarify for the influence to the overall project finance.	B.2.1.	The new law on revenue tax was published at 16th March 2007, and was executed from 1st Jan 2008. The tax rate for domestic enterprises is decreased from 33% to 25%. The tax rate change will cause the FIRR of project increase from 6.62% to 6.94%, still below the benchmark IRR. However, all the implementation decisions were made earlier than the new revenue tax law is announced. Therefore, the factor of law's changing is not considered in assessing the additionality of proposed project. According to the SL16-95, the economical evaluation for small scale hydropower project should apply 20 years to the project life cycle in operational status. The IRR calculation excel table provided employs the same parameters as financial assessment part of PDR, except the parameter of "life cycle", and conclude the result of 6.62%.	OK It is clarified by the project participant that an income tax rate of 33%, but not 25%, was put into the financial analysis because 33% was the official income tax rate at the time of project financial assessment and project decision. The new income tax law was announced on 16th March 2007, while the project was started on 16th August 2004. The subsequent change of the tax rate to 25% does not prohibit or affect the overall project development and implementation. Furthermore, the project participant has demonstrated that the new tax rate shall result the FIRR to 6.94%, which is still below the benchmark IRR. The discrepancy of IRR resulted in PDR & PDD is claimed because of the different input for the project lifetime in the calculations, 30yrs & 20yrs respectively. The audit team is able to check with the applied benchmark reference, i.e. SL16-95, where it allows the application of 20 years in the hydro projects' economic analysis with the

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
			benchmark being set as 10%. The resulted IRR is 6.62% and the IRR spreadsheet has been checked by the audit team to be valid. The CL is therefore resolved and closed.
CL07 It is noted from the PDD that "Benchmark Analysis" has been chosen for project financial assessment. However, no justification of applicability of the analysis option is duly provided. Please clarify. In addition, it is required by the "Economic Evaluation Code for Small Hydropower Projects (SL16-95)" that the financial analysis should be carried out based on 20 years, where the project proponent adopted 30 years in the analysis. Please clarify.	B.2.1.	The scanned and translated pages with relevant content have been provided to DOE as justification. The pages are selected from SL16-95, which provides the benchmark FIRR of 10% for small scale hydropower project. The SL16-95 requires project designer carrying out financial analysis base on 20 years; therefore, the project developer revises the IRR calculation process accordingly, and gets the result of 6.62% in stead.	OK It is noted in the revised PDD that, simple cost analysis & investment comparison analysis are excluded from the analysis. Justification on selection of "benchmark analysis" for project financial assessment is provided thereby. The audit team is able to check up with the applied economic analysis reference, i.e. SL16-95, and in which it states that "the project is financially feasible only when the FIRR is above or equal to benchmark FIRR. The benchmark FIRR for small-scale hydropower projects (<25MW) is 10%". In viewing the popularity of adoption of this benchmark evaluation method in China's small hydropower industry, the benchmark analysis is

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
			deemed appropriate for the proposed project. The financial analysis has been revised to put the project lifetime as 20 years according to the requirements set out in SL16-95. The resulted IRR is 6.62%. The CL is therefore resolved and closed.
CL08 Please provide the primary source reference for verification of financial indicators listed in Table 5 of B.5 in PDD. In addition, please provide explanation for the selection of those chosen parameters.	B.2.1.	The primary sources referred in table 3 for financial assessment are provided in updated PDD.	OK Indication of primary source reference has been added in the revised PDD (revised as Table 3) and is checked by the audit team to be valid. According to EB38 meeting, the audit team considers that the period of time between the finalization of the PDR (i.e. April 2004) and the investment decision (16th August 2004) is sufficiently short that it is unlikely in the context of the underlying project activity that the input values would have materially changed. Details on how key financial input values and the IRR calculation being independently checked by the audit

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
			team are presented in the VR, section 4.4 (Additionality). The CL is therefore resolved and closed.
CL09 Please provide justification on the selection of parameters and fluctuation range in the Sensitivity Analysis. The analysis is considered not comprehensive enough to reasonably cover those parameters which are anticipated to probably be fluctuating throughout the project period, e.g. electricity price, O&M cost, operating hours, etc.	B.2.1.	The sensitive analysis is revised to apply another justification approach, which is analyzed to proof that it is unrealistic for the variation of parameters to cause the FIRR overcoming the benchmark, and the parameters selected are most significant to the financial assessment result, which include total investment, tariff, annual operation hour and annual O&M cost.	OK It is noted in the revised PDD that the discussion of sensitivity analysis has been carried out in another approach, where it covers the justification on how unrealistic would the FIRR go beyond the benchmark under variation of 4 parameters, incl. total investment, tariff, annual operation hour & annual O&M cost. The arguments are agreed by the audit team that it would be unlikely for the FIRR to reach the benchmark FIRR under variation of those parameters. Explanation on the selection of the sensitivity test parameters is given, which is focused mainly on those parameters which are more likely to be varying along the project implementation and more significant to the financial assessment result.

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
			It is noted that the sensitivity analysis is revised to cover also those fluctuating parameters which includes annual operating hours and annual O&M cost. The CL is therefore resolved and closed.
CL10 Please provide evidence documents for demonstrating the claims of refusal on loan application by the bank.	B.2.1.	The bank loans refusal is inaccurate information given in draft PDD, from on-site visit findings, it is found that the document is not available. And thus, it is not further mentioned in updated PDD and unnecessary to provide relevant document. To demonstrate the additionality and the process of considering CDM as key to project implementation, the appropriate evidence document is provided.	OK It is noted that the mentioning of bank loan refusal is a mistake in the published PDD (version 1) dated 30th Sept 2007. The audit team has checked against the bank loan approval record dated 19th July 2004 that the bank has readily considered the intended CDM application of the proposed project and considered the CDM income significantly improve the poor project financial condition. The CL is therefore resolved and closed.
CL11	D.4.1.	The inconsistent places in the	OK

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
Some sections of the content in the "Handbook of Monitoring and Management for Yuzitang Hydropower Project" are found inconsistent with the practical condition as revealed on-site, e.g. management and usage of monitoring logsheet, metering flow diagram, etc. Please according revise the handbook to reflect the exact operation and submit to the audit team for verification.		monitoring handbook are revised according to the findings in on-site visit.	The project-specific monitoring handbook has been received from the project participant. It is checked by the audit team that the practical condition has been correctly revealed in the handbook. The CL is therefore resolved and closed.
CL12 There is no auxiliary electricity meter installed at the project location for back-up monitoring purpose, which is inconsistent with the information reflected in the PDD. Please clarify if the provision of auxiliary electricity meter is mandatorily required. If so, please accordingly demonstrate to the audit team in the aid of flow diagram for the concerned installation with supporting evidence. Or, if not, revise the relevant sections of PDD to reflect the practical setup of on-site monitoring system.	D.4.2.	From on-site visit to project site, it is found that no auxiliary meter is installed in the project. Therefore, it has been revised accordingly in PDD. Moreover, according to the *Technical administrative code of electric energy metering* DL/T 448-2000, it is not mandatory for the project owner to install auxiliary meter for small scale hydropower project.	OK The section "Monitoring apparatus & instalment" is noted amended in the revised PDD to reflect the factual arrangement. The audit team is able to check with the statutory requirements, namely DL/T 448-2000 <Technical administrative code of electricity energy metering>, released by the State Economy & Trade Commission on 3rd November 2000, that in p.9 it reads "auxiliary electricity meter shall be installed for power generator with installed capacity of 100MW or above". Where the installed capacity of the proposed project is 9.6MW, it is not mandatorily required to install auxiliary

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
			electricity meter. The CL is therefore resolved and closed.
CL13 Please provide the calculation of power density of the proposed project, including reference source of submerged area information, for verification of project emission.	D.2.1. E.1.1.	The power density is calculated in part B6.1 of PDD, and the reference source of submerged area information is provided in the footnote No.14.	OK The power density of the proposed project is calculated as follow:- Installed capacity (W)/ submerged area (m^2) = 9.6MW / 32,733.5m^2 = 293 W/m^2 i.e. > 10 W/m^2 The project emission can therefore be considered as zero as per the selected methodology. The CL is therefore resolved and closed.
CL14 Please clarify for the justification of leakage consideration in the emission reduction estimation, in accordance with the AMS-I.D./ Version 12 but not ACM0002 as stated in	D.3.1. E.2.1.	The leakage consideration in the relevant part is revised to be in accordance with the methodology AMS-I.D.	OK The justification of leakage consideration is revised in PDD to demonstrate that, according to AMS-I.D., there shall be no leakage since

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
B.6.1. of PDD.			there is neither power generating equipment transfer from another activity nor existing equipment transfer to another activity exists in the project. The CL is therefore resolved and closed.
CL15 It is noted that the starting date of crediting period is selected as 1st January 2008, which is however deemed to be not realistic in temporal consideration. Please therefore review for the adjustment of estimated emission reduction during the crediting period, i.e. A.4.3. & B.6.4. of PDD. Also, please substantiate for the stated hours of operation and efficiency of water turbines & generators in the influence to the whole electricity generation setup.	E.4.1.	The starting date of crediting period is revised to be 1st November 2008, which is realistic under temporal conditions. And the relevant parts have been revised accordingly. The technical parameters are provided in Table 1 in part A.4.2. The operation hour is determined according to the dozens of years' water records, while the efficiency of turbines & generators is setup by manufacturer. The operation hour is estimated by the professional Design institute, which is a third party who is responsible for technical assessment job of project, and the calculation process of operation hour is given in A4.2 of PDD.	OK The crediting period as 1st November 2008 is considered much realistic in temporal consideration. The relevant ER estimation has also been revised in the PDD to demonstrate the updated calculation results. Further clarification on the operation hour is provided in the revised PDD. It is clearly referred to the PDR that the proposed project has been able to generate hydropower of 28,100MWh, applying operation hours of 2,927 hr/a, after the phase II completion in December 2007. The CL is therefore resolved and

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
			closed.
CL16 Please provide all of the returned stakeholder questionnaires to the audit team for checking and verification. In addition, please clarify for the scale of questionnaire survey, as it is reported in Section E of the PDD ambiguously that 20 persons were consulted with 50 nos. of questionnaires distributed and 46 nos. returned.	G.1.1. G.1.2.	All the returned stakeholder questionnaires are provided to DOE for checking. And the summary of consulting records is stated in the report, as well as in part E.2 of PDD.	OK It is confirmed that there were totally 50 persons interviewed. Among the 50 nos. of questionnaires distributed, 46 nos. were successfully collected. Copies of all returned questionnaires were received from the project proponent for audit team's verification. It is checked that all the respondents showed supportive attitude to the project implementation. The questionnaire summary has been included in the revised PDD. The CL is therefore resolved and closed.
CL17 Please clarify and reflect in the PDD for the background of stakeholders consulted and how were they being identified to carry out the questionnaire survey.	G.1.1. G.1.2.	The relevant background information of stakeholders' consultant is given in the updated PDD.	OK Background information of the consulted stakeholders is briefly introduced in the PDD, where most of them are actually affected by the project implementation. It is also acknowledged that the selected interviewees are mainly focused on those who set around

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			the project location. The CL is therefore resolved and closed.

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