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Validation Report

Edison Spa

VALIDATION OF THE CDM-PROJECT: JINPING LADENG RIVER HYDROPOWER STATION

REPORT NO. 1134168

8th October 2009

TÜV SÜD Industrie Service GmbH
Carbon Management Service
Westendstr. 199 - 80686 Munich – GERMANY

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Subject: Validation of a CDM Project

Accredited TÜV SÜD Unit:	**TÜV SÜD Contract Partner:**
TÜV SÜD Industrie Service GmbH Certification Body "climate and energy" Westendstr. 199 80686 Munich Germany	TÜV Italia srl Industrie Service Via Carducci 125 Ed. 23 20099 Sesto San Giovanni (MI) ITALY
Project Participant: EDISON Spa Foro Buonaparte, 31 20121 Milano Italy	**Project Site(s):** Bozhuchong Nature Village, Ma'andi Town, Jinping County, Honghe Prefecture, Yunnan Province, People's Republic of China Ladeng Dam: Longitude: 103°29′43″E Latitude: 22°48′10″N Ganwa Dam: Longitude: 103°29′08″E Latitude: 22°49′10″N Power Plant: Longitude: 103°29′43″E Latitude: 22°49′30″N

Project Title: Jinping Ladeng River Hydropower Station

Applied Methodology / Version: ACM0002 / Version 07	**Scope(s):** 1 **Technical Area(s):** 1.1

First PDD Version:		**Final PDD version:**	
Date of issuance:	25-12-2007	Date of issuance:	23-07-2009
Version No.:	2.0	Version No.:	3.1
Starting Date of GSP	28-02-2008		

Estimated Annual Emission Reduction: 55,501 tCO_2e

Assessment Team Leader:	**Further Assessment Team Members:**
Dr. Sven Kolmetz	Xiong Rencheng Charles Huang Riccardo Arena

Summary of the Validation Opinion:

☒ The review of the project design documentation and the subsequent follow-up interviews have provided TÜV SÜD with sufficient evidence to determine the fulfilment of all stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM. Hence TÜV SÜD is recommending the project for registration by the CDM Executive Board if letters of approval of all Parties involved will be available before the expiring date of the applied methodology(ies) or the applied methodology version respectively.

☐ The review of the project design documentation and the subsequent follow-up interviews have not provided TÜV SÜD with sufficient evidence to determine the fulfilment of all stated criteria. Hence TÜV SÜD will not recommend the project for registration by the CDM Executive Board and will inform the project participants and the CDM Executive Board on this decision.

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Abbreviations

ACM	Approved Consolidated Methodology
AM	Approved Methodology
AMS	Approved Methodology Small scale
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CER	Certified Emission Reduction
CM	Combined Margin
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
CR / CL	Clarification Request
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission Reduction
FAR	Forward Action Request
FSR	Feasibility Study Report
GHG	GreenHouse Gas(es)
IPCC	Intergovernmental Panel on Climate Change
IRL	Information Reference List
IRR	Internal Rate of Return
KP	Kyoto Protocol
MP	Monitoring Plan
NGO	Non Governmental Organisation
OM	Operational Margin
PDD	Project Design Document
PP	Project Participant
TÜV SÜD	TÜV SÜD Industrie Service GmbH
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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INTRODUCTION

1.1 Objective

The validation objective is an independent assessment by a Third Party (Designated Operational Entity = DOE) of a proposed project activity against all defined criteria set forth by the registration under the Clean Development Mechanism (CDM). Validation is part of the CDM project cycle and results in a conclusion by the executing DOE whether a project activity is valid and should be submitted for registration to the CDM Executive Board (CDM-EB). The ultimate decision on the registration of a proposed project activity rests with the CDM-EB and the Parties involved.

The project activity covered by this validation report has been submitted under the project title:

Jinping Ladeng River Hydropower Station.

1.2 Scope

The scope of any assessment is defined by the underlying legislation, regulation and guidance given by relevant entities or authorities. In the case of CDM project activities the scope is set by:

- The Kyoto Protocol, in particular § 12 and modalities and procedures for the CDM
- Decision 2/CMP1 and Decision 3/CMP.1 (Marrakech Accords)
- Further COP/MOP decisions with reference to the CDM (e.g. decisions 4 – 8/CMP.1)
- Decisions and specific guidance by the EB published under http://cdm.unfccc.int
- Guidelines for Completing the Project Design Document (CDM-PDD), and the Proposed New Baseline and Monitoring Methodology (CDM-NM)
- Baselines and monitoring methodologies (including GHG inventories)
- Management systems and auditing methods
- Environmental issues relevant to the sectoral scope applied for
- Applicable environmental, social impacts, and aspects of CDM project activity
- Sector specific technologies and their applications
- Current technical and operational knowledge of the specific sectoral scope and information on best practice

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

Once TÜV SÜD receives a first PDD version, it is made publicly available at the UNFCCC webpage and at TÜV SÜD's webpage to start a 30 day global stakeholder consultation process (GSP). In special circumstances, e.g. certain conditions allow the GSP to be repeated, a request to revise the PDD will be processed. The original PDD and the modified PDD will form the basis for the final evaluation. Information on both PDD's is presented on page 1.

The purpose of a validation is its use during the registration process as part of the CDM project cycle. Therefore, TÜV SÜD cannot be held liable by any party for decisions made, or not made, based on the validation opinion, which will go beyond that purpose.

2 METHODOLOGY

The project assessment applies standard auditing techniques to assess the correctness of the information provided by the project participants. The assessment is based on the "Clean Development

Mechanism Validation and Verification Manual" version 01. The work starts with the appointment of the team covering the technical scope(s), sectoral scope(s) and relevant host country experience for evaluating the CDM project activity. Once the project is made available for the stakeholder consultation process, members of the team carry out the desk review, follow-up actions, resolution of issues identified, and finally preparation of the validation report. The prepared validation report and other supporting documents then undergo an internal quality control by the CB "climate and energy" before submission to the CDM-EB.

In order to ensure transparency, assumptions are clear and explicitly stated; the background material is clearly referenced. TÜV SÜD developed methodology-specific checklists and protocol customised for the project. The protocol shows, in a transparent manner, criteria (requirements), the discussion of each criterion by the assessment team, and the results from validating the identified criteria.

The validation protocol serves the following purposes:

It organizes details and clarifies the requirements a CDM project is expected to meet;

It ensures a transparent validation process where the validator has to document how a particular requirement has been validated, as well as the results of the validation and any adjustments, if any, made to the project design.

The validation protocol consists of three tables. The different columns in these tables are described in the figure below.

Validation Protocol Table 1: Conformity of Project activity and PDD				
Checklist Topic / Question	**Reference**	**Comments**	**PDD in GSP**	**Final PDD**
The checklist is organised in sections following the arrangement of the applied PDD version. Each section is then further sub-divided. The lowest level constitutes a checklist question / criterion.	*Gives reference to documents where the answer to the checklist question or item is found in case the comment refers to documents other than the PDD.*	*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. In some cases sub-checklist are applied indicating yes/no decisions on the compliance with the stated criterion. Any **Request** has to be substantiated within this column*	*Conclusions are presented based on the assessment of the first PDD version. This is either acceptable based on evidence provided (☑), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below). **Clarification Request (CR)** is used when the validation team has identified a need for further clarification. **Forward action request** to highlight issues related to project implementation that require review during the first verification.*	*Conclusions are presented in the same manner based on the assessment of the final PDD version and further documents including assumptions presented in the documentation.*

Validation Protocol Table 2: Resolution of Corrective Action and Clarification Requests			
Clarifications and corrective action requests	**Ref. to table 1**	**Summary of project owner response**	**Validation team conclusion**
If the conclusions from table 1 are either a	*Reference to the checklist*	*The responses given by the client or other*	*This section should summarise the discussion on and revision to*

Corrective Action, a Clarification or a Forward action Request, these should be listed in this section.	*question number in Table 1 where the issue is explained.*	*project participants during the communications with the validation team should be summarised in this section.*	*project documentation together with the validation team's responses and final conclusions. The conclusions should be reflected in Table 1, under "Final PDD".*

In case of a denial of the project activity more detailed information on this decision will be presented in table 3.

Validation Protocol Table 3: Unresolved Corrective Action and Clarification Requests		
Clarifications and corrective action requests	**Id. of CAR/CR 1**	**Explanation of the Conclusion for Denial**
If the final conclusions from table 2 results in a denial the referenced request should be listed in this section.	*Identifier of the Request.*	*This section should present a detail explanation, why the project is finally considered not to be in compliance with a criterion with a clear reference to the requirement which is not complied with.*

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

2.1 Appointment of the Assessment Team

According to the technical scopes and experiences in the sectoral or national business environment TÜV SÜD has composed a project team in accordance with the appointment rules of the TÜV SÜD certification body "climate and energy". The composition of an assessment team has to be approved by the Certification Body (CB) to assure that the required skills are covered by the team. The CB TÜV SÜD operates four qualification levels for team members that are assigned by formal appointment rules:

- Assessment Team Leader (ATL)
- Greenhouse Gas Auditor (GHG-A)
- Greenhouse Gas Auditor Trainee (T)
- Experts (E)

It is required that the sectoral scopes and technical areas linked to the methodology has to be covered by the assessment team.

Name	**Qualification**	**Coverage of scope**	**Coverage of technical area**	**Host country experience**
Dr. Sven Kolmetz	**ATL**	☑	☑	☑
Xiong Rencheng	GHG-A	☑	☑	☑
Minglong (Charles) Huang	GHG-A	☑		☑
Riccardo Arena	GHG-A	☑	☑	

Xiong Rencheng is an auditor for environmental management systems and JI/CDM at TÜV SÜD China. He is based in Shenzhen. He has received training in the CDM validation process and participated already in several CDM project assessments.

Minglong (Charles) Huang is an lead auditor for both quality management system (ISO9001) and environmental management systems (ISO 14001) in TÜV SÜD China. He is based in Shenzhen. After receiving GHG auditor training course in Germany, he has already involved in several CDM validation and cases.

Riccardo Arena is a auditor for environmental management systems and JI/CDM at the department "Climate, Energy and Environment" of the Italian branch of TÜV SÜD Group. He holds a Master Degree in Environmental Engineering and a post degree course in International Development Cooperation and Project Design. He has been involved in the topic of environmental auditing, monitoring and verification due to the requirements of the Kyoto Protocol.

2.2 Review of Documents

The first version of the PDD was submitted to the DOE in February 2008. The first PDD version submitted by the PP and additional background documents related to the project design and baseline have been reviewed to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources (if available) has been done as initial step of the validation process. A complete list of all documents and proofs reviewed is attached as annex 2 to this report.

2.3 Follow-up Interviews

On 5 March 2008 TÜV SÜD performed interviews, telephone conferences, and physical site inspection with project stakeholders to confirm relevant information, and to resolve issues identified in the first document review. The table below provides a list of all persons interviewed in this context.

Name	Organisation
Mr. Zhang Junfong	Yunnan Jinping Ladeng River Power Generation Co., Ltd.
Mr. Tao Pingshen	Yunnan Jinping Ladeng River Power Generation Co., Ltd.
Ms.Yang Ming	Yunnan Jinping Ladeng River Power Generation Co., Ltd.
Mr. Zhao Chenchen	Yunnan Jinping Ladeng River Power Generation Co., Ltd.
Ms. He Xiaodan	Yunnan Jinping Ladeng River Power Generation Co., Ltd.
Ms.Wang Xuechun	Yunnan Jinping Ladeng River Power Generation Co., Ltd.
Ms. Zhen Ling	Beijing Tiangqing Power International CDM Consulting Co.,Ltd
Mr. Zhao Jinlan	Beijing Tiangqing Power International CDM Consulting Co.,Ltd
Mr. Dai Juoga	Jinping Water Source Bureau
Mr. Liu Yongli	Jinping Environmental Protection Bureau
Mr. Tao Xiaohua	Jinping Land Management Bureau
Mr. Li Youchao	Jinping Environmental Protection Bureau
Mr. Chen Jianhua	Jinping Water Conservancy Bureau
Ms. Chen Yanhua	Jinping Environmental Protection Bureau
Mr. Shen Jinhui	Jinping Coordination Office
Mr. Deng Guiping	Jinping Coordination Office

2.4 Further cross-check

During the validation process the team makes reference to available information related to similar projects or technologies as the CDM project activity. The documentation has also been reviewed against the approved methodology/ies applied to confirm the appropriateness of formulae and correctness of calculations.

2.5 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation is to resolve the requests for corrective actions, clarifications, and any other outstanding issues which needed to be clarified for TÜV SÜD`s conclusion on the project design. The CARs and CRs raised by TÜV SÜD were resolved during communication between the client and TÜV SÜD. To guarantee the transparency of the validation process the concerns raised and responses that have been given are documented in more detail in the validation protocol in annex 1.

The final PDD version submitted June 2009 serves as the basis for the final assessment presented. Changes are not considered to be significant with respect to the qualification of the project as a CDM project based on the two main objectives of the CDM. These are an achievement of reduction of anthropogenic GHG emissions and to contribute to a sustainable development.

2.6 Internal Quality Control

As final step of a validation activity the final documentation, which includes the validation report and the validation protocol, has to undergo an internal quality control by the CB “climate and energy”. That means that each report has to be approved either by the head of the CB or the deputy. In projects where either the Head of the CB or his/her Deputy is part of the assessment team approval can only be given by the either one not serving on the project.

After confirmation of the PP the validation opinion and relevant documents are submitted to the EB through the UNFCCC web-platform.

3 SUMMARY

The assessment work and the main results are described below in accordance with the VVM reporting requirements. The reference documents indicated in this section and Annex 1 are stated in Annex 2.

3.1 Approval

The project participants are Yunnan Jinping Ladeng River Power Generation Co., Ltd. of People's Republic of China and Edison Spa of Italy. The host Party China and further participant Party Italy meet the requirements to participate in the CDM.

The DNA of the Italy has issued a LoA (IRL 115) on 20 July 2009 authorizing Edison Spa as a project participant. The DNA of China has also issued a LoA (IRL 35) on January 2008 authorizing Yunnan Jinping Ladeng River Power Generation Co., Ltd. as a project participant. TÜV SÜD received these letters from the project participants directly and considers the provided letters as authentic.

The China LoA has further been double-checked with the CDM project webpage sponsored by the Department of Climate Change, NDRC (http://cdm.ccchina.gov.cn), which further confirms the approval of this CDM project.

Furthermore, after checking the provided LoAs, TÜV SÜD confirms that both letters refer to the precise proposed CDM project activity title in line with the title in the PDD "Jinping Ladeng River Hydropower Station".

Both letters also indicate that each participating Party is a Party to the Kyoto Protocol, and that the participation in the Jinping Ladeng River Hydropower Station project is voluntary. The Chinese LoA also confirms that the proposed CDM project activity contributes to the sustainable development of China (host country). Based on the information given in these letters, TÜV SÜD considers the approval as unconditional with respect to these items.

Both LoAs have been issued by the respective Party's DNA, National Development and Reform Commission of the People's Republic of China and Ministero dell'Ambiente e della Tutela del Territorio e del Mare, respectively.

TÜV SÜD therefore considers that the requirements of VVM (§§ 45-48) have been met.

The LoA does not refer to a specific version of the PDD or validation report. The corresponding references included to LoA, PDD and validation report are consistent.

3.2 Participation

The participants of the project activity have been approved by the corresponding Parties, which is confirmed by the issued LoAs.

The means of validation used are similar to the ones described in section 3.1, specifically in regard to the approval process of the project activity.

3.3 Project design document

The PDD is compliant with relevant form and guidance as provided by UNFCCC.

The most recent version of the PDD form was used.

TÜV SÜD considers that the guidelines for the completion of the PDD in their most recent version have been followed. Relevant information was provided by the participants in the applicable PDD sections. Completeness was assessed through the checklist included in Annex 1 of this report.

3.4 Project description

The project consist of a diversion type hydropower station with a total installed capacity of 16MW, distribuited within two 5MW unists and two 3MW units. Two new reservoirs with a total surface of 12,266.67 m^2 at full level will be created with a power density of 1,304.35 W/m^2.

With an annual average operational time of 4807 and 4715 hours (for the 5MW and 3MW units respectively), the project is expected to generate 76,360 MWh, providing a net annual electricity supply to the China Southern Power Grid of about 65,810 MWh, assuming an effective power factor of 90%, a self consumption rate of 0.25% and transmission and distribution losses factor of 4%. The project connects to the Yunnan Grid which is part of the China Southern Power Grid.

The project will contribute to the suistainable development of the area, substituiting the relevant amount of electricty coal – based production with clean hydropower electricty, reducing the annual GHG emissions for an amount of 55,501 tCO_2. Furthermore, the project will contribute to reduce air pollution and the gap between demand and supply of energy improving the local grid system of energy supply; the project will also contribute to the local economic development in terms of employment creation.

The information presented in the PDD on the technical design is consistent with the actual planing and implementation of the project activity as confirmed by:

- review of data and information (see annex 2). This was verified with other sources;
- An on-site visit has been performed and relevant stakeholder and personnel with knowledge of the project were interviewed. If doubts arose further investigations and additional interviews were conducted
- Finally, information related to similar projects or technologies as the CDM project activity have been used to confirm the accuracy and completeness of the project description.
-

In conclusion, TÜV SÜD confirms that the project description, as included to the PDD, is sufficiently accurate and complete in order to comply with the requirements of the CDM.

3.5 Baseline and monitoring methodology

3.5.1 Applicability of the selected methodology

Compliance with each applicability condition as listed in the chosen baseline and monitoring methodology ACM0002 version 07 has been demonstrated.

The assessment was carried out for each applicability criteria and included, among others, the compliance check of the local project setting with the applicability conditions in regard to baseline setting and eligible project measures. This assessment also included the review of secondary sources, which sustain that applicability conditions are complied with.

The Methodology specific protocol, included to the Annex 1, documents the assessment process, which also includes the steps taken. The results on the compliance check, as well as the relevant evidence, are detailed in Annex 1.

TÜV SÜD confirms that the chosen baseline and monitoring methodology is applicable to the project activity.

Emission sources, which are not addressed by the applied methodology, and are expected to contribute more than 1% of the overall expected average annual emission reductions, have not been identified.

3.5.2 Project boundary

The project boundary was assessed in the context of physical site inspection, interviews, and on the secondary evidence received on the design of the project.

The project boundary of the proposed project activity has been identified with the physical facilities related to the project and by all the other power plants connected to the Southern China Grid. Thus, all the equipements connected to the regional grid are included: turbines, generators, transformer, transmission and distribution systems. Furthermore, as the Southern China Grid imports power from the Southern China Power Grid, this latter has been considered part of the project boundary too.

Main emission source included in the baseline project boundary is CO_2 from electricty generation in fossil fuel fired power plants in the Southern China Grid; CH_4 and N_2O are minor emission sources and have been not included in the baseline, as defined in ACM0002. In the scenario of the project activity, no emissions have been included and it's confirmed that this reflect the project activity features and specifications: CO_2 and N_2O have been excluded for simplification. The CH_4 emissions from the reservoir have also been exclued according to methodology as the power density of the project (1,304.35 W/m^2) is greater than 10 W/m^2.

Relevant documentation assessed to confirm the project boundary are as follows:

Relevant documentation assessed to confirm the project boundary are as follows:

- Preliminary Design Report (IRL 8);
- Pre-review of land usage (IRL 14);
- Environmental Impact Assessment (IRL 11);
- Electricity Purchase and Sales contract with local grid (IRL 25).

This was also confirmed during the validation process. Details and/or observations, if applicable, are listed in Annex 1.

Therefore, TÜV SÜD confirms that the identified boundary, the selected sources, and gases as documented in the PDD are justified for the project activity.

3.5.3 Baseline identification

The PDD defines the following baseline scenario:

the continued operation of the existing power plants and the addition of new generation sources on the China Southern Power Grid to meet the electricity demand has been identified as the baseline scenario of the proposed project activity.

The information presented in the PDD has been validated by an initial document review of all data. Further confirmation is based on the on-site visit and researching information from similar projects and/or technologies. The sources referenced in the PDD have been quoted correctly. The information was verified against credible sources, such as:

- China Electric Power Yearbook (2002 to 2006) (IRL34);
- China Energy Statistical Yearbook (2002 to 2006) (IRL33);
- Notice on Strictly Prohibiting the Construction of Fuel-fired Power Plants with Installed Capacity of 135MW or below (IRL28);
- Baseline Emission Factors for Regional Grids in China, renewed by the Director Office of the National Climate Change Coordination of NDRC (IRL109);
- Approved CDM methodology ACM0002 / v.7 (IRL 2);

TÜV SÜD has determined that no reasonable alternative scenario has been excluded.

Based on the validated assumptions on calculations TÜV SÜD considers that the identified baseline scenario is reasonable.

Taking the definition of the baseline scenario into account, TÜV SÜD confirms that all relevant CDM requirements, including relevant and/or sectoral policies and circumstances, have been identified correctly.

A verfiable description of the baseline scenario has been included in the PDD.

In regard to item 86 of VVM, TÜV SÜD confirms that:

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

3.5.4 Algorithm and/or formulae used to determine emission reductions

TÜV SÜD has assessed the calculations of project emissions, baseline emissions, leakage, and emission reductions. Corresponding calculations were carried out based on calculation spreadsheets. The parameters and equations presented in the PDD, as well as other applicable documents, have been compared with the information and requirements presented in the methodology and respective tools. The equation comparison has been made explicitly following all the formulae presented in the calculation files.

The assumptions and data used to determine the emission reductions are listed in the PDD and all the sources have been checked and confirmed.
Based on the information reviewed it can be confirmed that the sources used are correctly cuoted and interpreted in the PDD.
The values presented in the PDD are considered reasonable based on the documentation and references reviewed, as well as, the result of the interviews.
The baseline methodology has been correctly applied according to requirements.
The estimate of the baseline emissions can be confirmed as the same that have been replicated by the audit team using the information provided.
Detailed information on the verification of the parameters used in the equations can be found in Annex 1. The algorithms for the determination of the baseline, project, and leakage are discussed in the following sections.

3.5.4.1 Baseline Emissions

The calculation of the baseline emissions followed the procedures described in the methodology ACM0002 Version 07. The Southern China Power Grid is considered to be the project boundary.
The operating margin emission factor (EF_{OM}) was determined based on the simple OM method. The ex-ante option was chosen for this calculation. The calculation of the build margin emission factor (EF_{BM}) was based on modified methods agreed by the EB, because plant specific data are not available in China. The emission factor of the thermal power plants was calculated by the proportion of

the emissions of coal, gas and oil times the emission factor of the best available coal, gas and oil power plant as defined and published by the Chinese DNA (IRL109). The new thermal capacity installation that exceeded 20% in the last years, for which data was available, was finally assessed with this factor.
EF factors need to be revaluated once it has been decided which values can be applied.
The value for the combined margin emission factor (EF_{CM}) was determined using the weighted average of the EF_{BM} and EF_{OM} using the default values for the factors as described in the methodology (i.e. 0.5 for hydro plants). It's confirmed that the final PDD uses the latest EFs as available at the time of the commencement of the validation (IRL 109) and that the same values were applied in the GSP PDD. As per the methodology, the project does not need to consider leakage or project emissions. As a result, the annual emission reductions equal the annual baseline emissions.

3.5.5 Project emissions

The calculation of the project emissions followed the procedure as described in the methodology ACM0002 Version 07. The power density (PD) of the proposed project has been accordingly calculated; being the project a new hydropower station with new reservoir, the installed capacity and the area of the reservoir before the implementation of the project activity (respectively Cap_{BL} and A_{BL}) have been assumed as zero. The relevant parameters in terms of project capacity and area of the reservoir at maximum water level after the implementation of the project (respectively Cap_{PJ} and A_{PJ}) have been set according to the project specifications (IRL 8). The result is a power density which is greater than 10 W/m^2; according to the methodology, it's confirmed that project emissions for the project (PE_y) are zero.

3.5.6 Leakage

According to ACM0002 Version 07, project participants do not need to consider leakage in the context of the proposed project activity.

3.5.7 Emission Reductions

In summary, the calculation of the baseline emissions, the consideration of the project emissions and leakage and the emission reductions, respectively, can be considered as correct.

3.6 Additionality

The additionality of the project has been presented in the PDD using following approach:

the steps described in the "Tool for the demonstration and assessment of additionality" (version 05.2) have been followed to demonstrate the additionality of the project activity. In particular the steps 1, 2 and 4 have been used because investment analysis has been found to be adequate to fully demonstrate the additionality.

The approach use in the PDD has been assessed initially through document review, during which following documents have been reviewed:

- Notice on Strictly Prohibiting the Construction of Fuel-fired Power Plants with Installed Capacity of 135MW or below (IRL28);
- The Economic Evaluation Code for Small Hydropower Project (SL16-95) (IRL32);
- Yearbook of the China Water Resources 2006 (IRL50)

On site the additionality has been discussed principally with Mr. Zhang Junfong, Chairman of Yunnan Jinping Ladeng River Power Generation Co., Ltd.. Further documents have been reviewed onsite (Annex 2).

Finally, the data, rationales, assumptions, justifications, and documentation provided have been verified using local knowledge as well as sectoral and financial expertise. This information was also confirmed through the following documentation:

- Financial Audit Report (IRL 48);
- Water Resource Distribution (IRL 51).

Based on these validation steps we can confirm that the documentation assessed is appropriate for this project.

3.6.1 Prior consideration of the clean development mechanism

The starting date of the project activity is determined by the day when the construction contract was signed on 14 March 2006; this is the earliest date at which the implementation of the project activity begins with the signature of the related construction contract. In order to corroborate this information the assessment team has reviewed the following documents: Power Plant Construction Contract (IRL 22) and Purchase contract of turbines and generators (IRL 23); additionally the assessment team verified this information with Mr. Shen Jinhui of the Jinping Coordination Office; this allow to confirm that the construction contract was signed, as evidenced, on March 2006.

The starting date of the project activity is determined to be 14/03/2006 which is before 02 August 2008, as well as prior to the GSP. The PPs presented the following information to the assessment team:

- The minute of the Meeting of the Board of Directors of Yunnan Jinping Ladeng River Hydro-Electric Co., Ltd. (IRL 17);
- The Letter from the local DRC about Supporting Jinping Ladeng River Hydropower Station to apply CDM project (IRL 110).

The original documents presented have been reviewed and verified based on interviews with Mr. Zhang Junfong and Mr. Tao Pingshen of Jinping Ladeng River Hydro-Electric Co., Ltd.. Therefore the documents can be considered appropriate to confirm the prior consideration of CDM. Additionally, in order to confirm that the PPs have taken real actions to continue the activity as CDM, the following timeline has been reviewed against the respective documents presented in the table below:

Activity	Document	Auditor conclusion
January 2006 Directorate decision for the CDM	Minute of the Directorate decision for the CDM application (IRL 17)	The decision to apply for the CDM status comes immediately after the completion of the Financial Analysis Report (IRL 10).
March 2006 Contract with a CDM consultant in order to start the CDM application.	Cooperation Contract with TQ Power (IRL 111)	The original document has been checked on site and it's confirmed that at the time the project owner was seriously committed to proceed with the CDM application.
April 2006 TQ Power recommended the project to a first buyer (ENEL Trade)	ENEL Statement (IRL 99)	The first buyer (ENEL Trade) was discussing with TQ Power about cooperation on a batch of projects including the proposed one.
August 2006 The first buyer refused to	ENEL Statement (IRL 99)	ENEL Trade SpA did not proceed in finalizing an agreement for the project because of the already high number

proceed in cooperating for the project.		of projects handled at the time.
April 2007 CDM cooperation agreement with a second buyer	Agreement on Development Cooperation in Respect of CDM Projects (IRL 106)	The proposed project is mentioned among others as included in this agreement between the consultancy company and the potential buyer. The document has been verified in its original version. The signature date has been confirmed by Edison Spa and the same document has been seen by the DOE during previous validations of CDM projects under the same buyer. It's therefore confirmed the signature date of the same
October 2007 Signature of a letter of interest between the project owner and the buyer	Letter of Intent prepared and signed by the buyer and countersigned by the project owner (IRL98).	The letter forms the basis for the negotiation of an ERPA between the parties. The document represent a significant step in order to proceed with the signature of a final ERPA (IRL 113) with the buyer.
February 2008 Start of validation	Order to TÜV SÜD, GSP Start (UNFCCC Webpage)	Start of validation work by TÜV SÜD also clearly indicates that CDM actions were still on-going.
July 2009 Validation activities	e-mail including DOE – CB comments according to the internal quality control of the DOE	The final steps of the validation took place,

This confirms that the project complies with the requirements to demonstrate the prior consideration of the CDM.

3.6.2 Identifications of alternatives

The output of the project is electricity production.

The list of alternatives to supply the above mentioned results, which are also presented in the PDD, includes the project activity undertaken without being registered as CDM project. The remaining alternatives presented do include all plausible scenarios taking into account the local and sectoral situations for the mentioned results. The list of alternatives is therefore considered complete.

3.6.3 Investment analysis

The PP uses the investment analysis to demonstrate the additionality. The financial returns of the proposed project are insufficient to justify the investment.

The parameters used in the financial calculations have been validated based on a review of the sources presented in the PDD, inter alia the Economic Evaluation Code for Small Hydropower Projects (SL16-95) (IRL32) and the Financial Analysis Report (IRL10) (investment costs, the O&M costs, annual power supplied to the grid, tariff, etc.), the same that were confirm verbally on-site. Furthermore, the period of time between the finalization of the FAR and the investment decision is less than one month, therefore it can be confirmed that it is unlikely that the input values have significantly changed. Additionally, confirmation with

- Approval of the Financial Analysis Report (IRL 101), confirming the annual utilization hours and the static total investment used in the PDD;
- Financial Audit Report (IRL 48) issued in 2009, a third party document indicating that the final total investment undertaken by the project owner is 7% higher than the same as estimated in the FAR (IRL 10) and used in the PDD. The same document also indicates that the actual O&M costs for the project are 8.4% higher than the same as estimated in FAR and used in the PDD.
- The Economic Evaluation Code for Small Hydropower Project (SL16-95) (IRL32), recognized reference for most of the parameters affecting the O&M costs, such as number of employed people, welfare fund and insurance, housing and provident fund and other expenses;
- The preparation of Hydropower Station Business Plan (IRL 49), allowing to compare the average unitary investment and the O&M costs with the same parameters on a Chinese average level;
- Grid price agreement with the grid company (IRL25), indicating that the actual price agreed on an average basis throughout the year does not lead to meet the benchmark, even if slightly higher than the price expected at the time of the CDM decision and used in the FAR and PDD;
- The sheet of electricity supply to grid in year 2008 (IRL 94), indicating that the actual power supplied to the grid by the project in 2008 is 7.6% lower than the expected value as taken from the FAR and used in the investment analysis.
- Power Invoices (2008) issued by the grid company (IRL 36) indicating the actual grid prices applied on a seasonal basis and confirming the reasonability of the tariff used in the investment analysis as taken from the FAR.
- Water Resource Assessment Report (IRL 97), indicating and confirming the annual average operating time.

the DOE confirms that the data behind the annual gross power generation and definitely of the Plant Load Factor as defined in PDD have been determined by a third party institute contracted by the project participants (IRL 97) and that the same has been used while applying the project activity for implementation approval (IRL 10). It's thus confirmed that both requirements as per guidance EB48 – Annex 11 sections 3(a) and 3(b) have been duly fulfilled

As a result, it can be seen that the parameters are plausible and can be considered acceptable under the project situation.

The benchmark used for the financial comparison has been obtained the Economic Evaluation Code for Small Hydropower Stations (SL16-95) issued by the Ministry of Water Resources of the People's Republic of China. Although this value was published in 1995, its on-going validity was confirmed by its publisher again in 2008 (IRL 112). This value has been confirmed against the source, and the suitability for this project can be confirmed due to the definition of small scale as contained in the applicability conditions in SL16-95. This proves that the benchmark used is adequate for this project. In addition, the DOE has verified that, even including the entire expected gross power production as the power generating revenue, the IRR is still below the benchmark assuming a value of 9.92%. It's however confirmed that the assumptions behind the calculations in terms of plant load factor have been determined and reported (IRL 8 and IRL 10) by a third party company contracted by project participants. Furthermore, the same have been confirmed as applicable according to the following documents:

- Economic Evaluation Code for Small Hydropower Projects (IRL 32),confirming the conservativeness of a effective power factor of 90%;

- Regulation of Development Programming of Electrical Power in the Regions Mainly Supplied by Rural Hydropower (IRL 102), indicating as reference a figure of 0.5% for the internal power consumption rate and confirming the conservativeness of 0.25% as used in PDD;
- China Electric Power Yearbook 2007 (IRL 34) indicating an average transmission line loss of about 7.08% , compared to 4% line losses rate used in PDD.

Further assumptions presented in the financial analysis inter alia water resources fees, welfare fund, taxes have also been reviewed and were found to be appropriate based on IRL 96, IRL 95, IRL 10 and the local expertise of the DOE. This confirms that the underlying assumptions are appropriate for this project.

A sensitivity analysis is also presented in the PDD including +- 10% variations in the key parameters such as annual power generation, power price, static total investment and annual operating costs; it's confirmed that this approach reflect the FSR (IRL 8) and FAR (IRL 10) and that 10% variations are commonly applied and deemed reasonable to represent the maximum variations of these parameters in the Chinese context. In order to confirm the above, the following documents have been checked:

- The FSR (IRL 8) presenting the hydrological study behind the estimation of the annual operating hours and definitely confirming that the annual power production will unlikely deviates from the expected figure;
- Power Purchase Agreement 2007 and 2008 (IRL 25) indicating that the final price agreed is steady since the project begun its operation;
- Financial Audit Report (IRL 48) allowing to reject any hypothesis of decrease in the static total investment and of the annual operating time.

The financial calculations have been verified and no mistakes have been found. This confirms that the calculations are correct.

3.6.4 Barrier analysis

The project participants have not included in the PDD a barrier analysis; the assessment team confirms that this choice is in compliance with the additionality tool applied.

3.6.5 Common practice analysis

The region for the common practice analysis has been defined as Yunnan Province.

The assessment team has reviewed the approach presented in the PDD and can confirm that relevant parameters such as location, infrastructure, economical situation, and development have been taken into account in order to define the region to be used for the common practice. In particular, the correctness of the selected region for the common practice has been evidenced enlightening its peculiarities in terms of investment conditions (IRL 50 and 55) as well as natural conditions (IRL 51, 52, 53 and 54).

Therefore, the presented region can be considered appropriate for the common practice analysis.

The assessment team has reviewed official sources such as Yearbook of China Water Resources (IRL 50) indicating the existing hydropower plants similar to the proposed project activity, whose capacity is within below 50MW. This information confirms that the list of similar projects presented in the PDD is complete. Additionally, the team further verified the information based on interviews.

All similar projects, which are not a CDM projects, have been checked through reviewing all available documentation (See annex 2). Furthermore, the essential distinctions between these projects and the CDM project in question have been confirmed using the following independent documents

such as the Yearbook of the China Water Resources (IRL50) and information documents taken from several information on-line networks or public available information sources (IRL 57 to IRL 88, IRL 116 and 117). It should be noted that main differences found comparing to the other similar projects are related to lower annual average operating hours and higher total investment. According to this, the DOE has further deepened the assessment on the reasons and origin of the values applied for both these important parameters.

The annual average operating time, which is strictly connected to the hydrology of the river, as contained in the FAR (IRL 10) and in its approval (IRL 101) has been substantiated through the Water Resources Assessment Report compiled by a third party survey and design Institute (IRL 97). The report has been checked and it's deemed to be a reliable source presenting detailed information about the hydraulic conditions of the Xinqiao river within the reference period 1960 – 2002; it has been clarified that source of these 43 years data is the Xiaohegou Hydrographic Station and that the elaborations have been done according to the "Specification on Energy Economy Design of Water Resources and Hydroelectric Projects" (IRL 117), the 'Hydro energy Design Code for Small Hydro Power Projects' (IRL 118) and the 'Regulation for Hydrologic Computation of Water Resources and Hydropower Projects' (IRL 119).

The total investment for the project as included in the FAR (IRL 10) and in related approval (IRL 101), has been further confirmed by a third party institute through the FAR (IRL 48); the DOE has clarified that the project faces critical geological conditions as resulting from the first FSR (IRL 8) and reflecting in a higher investment cost due to need for landslides prevention and geological consolidation as explained in details in FSR and confirmed by the expert team panel which issued and evaluation opinion of the FSR (IRL 120).

The DOE confirms that the peculiarities of the proposed project in terms of annual operating time and investment have been explained and that related resulting figures have been sufficiently substantiated and found appropriate.

Therefore, it can be confirmed that the proposed CDM activity is not a common practice in the defined region.

3.7 Monitoring plan

The monitoring plan presented in the PDD complies with the requirements of the applicable methodology. The assessment team has verified that all parameters in the monitoring plan against the requirements of the methodology; no relevant deviations have been found .
The procedures have been reviewed by the assessment team through document review and interviews with the relevant personnel. This information, together with a physical inspection, allows the assessment team to confirm that the proposed monitoring plan is feasible, and within the project design. The major parameters to be monitored have been discussed with the PPs. Especially the location of meters, data management, and the quality assurance and quality control procedures to be implemented in the context of the project.
There are 6 hydropower stations on the Xinqiao river basin which are connected each other. A series of meters measure the power exchanges allowing to calculate the net power delivered to the grid by the Ladeng plant. These meters (M1, M3, M4, M5, M6, M7) are 0.5s accuracy class bi-directional meters; furthermore M14 and M15 will allow to directly measure the power produced by the project serving as backup meters. The equation used to obtain the net power supplied to the grid by the project, according to the monitoring provisions, has been checked and validated by the assessment team; it's confirmed that the energy exchanges have been duly taken into account and reflected in the calculation presented.
Power density of the proposed project will be also checked as part of the monitoring provisions by confirming the installed capacity of the project (Cap_{PJ}) and monitoring the area of the reservoir at full level (A_{PJ}).

Therefore, we find that the PP's will be able to implement the monitoring plan and the emission reductions achieved can be reported ex-post and verified.

3.8 Sustainable development

The LoA of the Host Country presented a statement that the project contributes to the sustainable development of the Host Party.

3.9 Local stakeholder consultation

The relevant local stakeholders have been invited via announcement published on a local newspaper. The evidence of these invitations is IRL 26. The assessment team has reviewed the documentation in order to validate the inclusion of relevant stakeholders. Local experts confirmed that the communication method used to invite the stakeholders was considered appropriate. The summary of comments presented in the PDD has been verified with the documentation of the stakeholder consultation and is found to be complete.

Comments presented by the local stakeholders have been taken into account by the PP. This has also been verified with information obtained during interviews.

Hence the local stakeholder consultation has been adequately performed according to the CDM requirements.

3.10 Environmental impacts

The project participants commissioned a local research institute to undertake an environmental impact assessment. The assessment team reviewed the documentation of the presented information. The IRL 11 "Environmental Impact Assessment of Yunnan Xinqiaohe Ladeng River station" confirms the correctness of the approach used by the PPs. We conclude that the PPs followed the requirements of the host country in regards to environmental impacts.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

TÜV SÜD published the project documents on the UNFCCC website by installing a link to TÜV SÜD's own website, and invited comments by affected Parties, stakeholders, and non-governmental organisations during a 30 day period.

The following table presents all gathered key information:

webpage: http://www.netinform.de/KE/Wegweiser/Guide2_1.aspx?ID=4415&Ebene1_ID=26&Ebene2_ID=1361&mode=1	
Starting date of the global stakeholder consultation process: 2008-02-28	
Comment submitted by: None	**Issues raised:** -
Response by TÜV SÜD: -	

Industrie Service

5 VALIDATION OPINION

TÜV SÜD has performed a validation of the following proposed CDM project activity:

Jinping Ladeng River Hydropower Station.

Standard auditing techniques have been used for the validation of the project. Methodology-specific customized checklists and protocol for the project have been prepared to carry out the audit in order to present the outcome in a transparent and comprehensive manner.

The review of the project design documentation, subsequent follow-up interviews and further verification of references have provided TÜV SÜD with sufficient evidence to determine the fulfilment of stated criteria in the protocol. In our opinion, the project meets all relevant UNFCCC requirements for the CDM. Therefore, TÜV SÜD will recommend the project for registration by the CDM Executive Board.

An analysis as provided by the applied methodology demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are additional to any that would occur in the absence of the project activity. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions as specified within the final PDD version.

The validation is based on the information made available to us, as well as the engagement conditions detailed in this report. The validation has been performed following the VVM requirements. The single purpose of this report is its use during the registration process as part of the CDM project cycle. TÜV SÜD can therefore not be held liable by any party for decisions made, or not made, based on the validation opinion beyond that purpose.

Munich, 08-10-2009

Certification Body “climate and energy”
TÜV SÜD Industrie Service GmbH

Munich, 08-10-2009

Assessment Team Leader

Industrie Service

Annex 1: Validation Protocol

Industrie Service

Table 1 Conformity of Project Activity and PDD

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
A. General description of project activity					
A.1. Title of the project activity					
A.1.1.	Does the used project title clearly enable to identify the unique CDM activity?	1, 2	The project is titled with the name of the project location, and the energy source of the project. Hence, it can be clearly identified.	☑	☑
A.1.2.	Are there any indication concerning the revision number and the date of the revision?	1, 2	The available PDD is indicated as 2nd version dated Dec. 25, 2007.	☑	☑
A.1.3.	Is this consistent with the time line of the project's history?	1, 2, 8,9, 10, 11, 12	The GSP has been started with this version. The project Environmental Impact Assessment (EIA) was approved on Mar.6, 2006 by Environmental Protection Bureau of Honghe Hani-Yi Autonomous Prefecture. The project was approved on May 18, 2006 by the Development and Reform Commission of Honghe Hani-Yi Autonomous Prefecture. Project construction started on Apr.1, 2006 and the project has been operational since 2007.	☑	☑
A.2. Description of the project activity					
A.2.1.	Is the description delivering a transparent overview of the project activities?	1, 2	The project is described transparently. It is a hydro power project, located on on Xinqiao River Basin, Jinping Miao-Yao-Dai Autonomous County, Honghe Hani-Yi Autonomous Prefecture, Yunnan Province, China. The installed capacity is 16MW and the average power generation for the grid is 65, 810 MWh. The power generated will be connected to the Southern China Power Grid.	☑	☑
A.2.2.	What proofs are available demonstrating that the project description is in compliance with the actual situation or planning?	1, 2, 8,9, 10, 11,	The project activity is the displacement of electricity generated by coal fired power plants with electricity generated by hydro power. The following documents deliver evidences for the project activity: - Feasibility study	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
		12	- EIA and EIA approval - Pre-review of land expropriation These documents have been evidenced during the audit.		
A.2.3.	Is the information provided by these proofs consistent with the information provided by the PDD?	1, 2,	Yes, it is. During the on site audit, the audit team reviewed these proofs provided by the project owner. They are consistent with the information provided by the PDD.	☑	☑
A.2.4.	Is all information presented consistent with details provided by further chapters of the PDD?	1, 2	Yes, it is.	☑	☑
A.3. Project participants					
A.3.1.	Is the form required for the indication of project participants correctly applied?	1, 2	The form is correctly applied. In Table A.1 and Annex 1 of the PDD the two parties involved in the project are mentioned. <u>Corrective Action Request No.1</u> Please provide the following information in the Table of A.3 of the PDD: *) In accordance with CDM modalities and procedures, at the time of making the CDM-PDD public at the stage of validation, a party involved may not have provided its approval. At the time of requesting registration, the approval by the party(ies) involved is required.	CAR 1	☑
A.3.2.	Is the participation of the listed entities or Parties confirmed by each one of them?	1, 2	<u>Open issue:</u> The letter of approval from Italy as well MoC has not been provided. They should be provided to the DOE before submitting for registration.	Open Issue	☑
A.3.3.	Is all information on participants / Parties provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	1, 2	Yes, it is.	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
A.4. Technical description of the project activity					
A.4.1.	*Location of the project activity*				
A.4.1.1.	Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	1,2	The project is located in Bozhuchong Nature Village, Maguaitang Village, Maandi Town, Jinping County, Honghe Hani-Yi Autonomous Prefecture, Yunnan Province, China. The project consists of two dams, two water diversion systems and a powerhouse. The Ladeng Dam is located on the downstream which is about 100m from the confluence of the Ladeng River and the Mawei River which are the branches of Xinqiao River, and the exact geographic location is at longitude of 103º29′43″E and latitude of 22º48′10″N. The Ganwa Dam is located on the downstream which is about 80m from the confluence of the Gan River and the Wayao River which are the branches of Xinqiao River, and the exact geographic location is at longitude of 103º29′08″E and latitude of 22º49′10″N. The power plant is located on the left bank of the Xinqiao River, about 135km from Jinping County, and the exact geographic location is at longitude of 103º29′43″E and latitude of 22º49′30″N.	☑	☑
A.4.1.2.	How is it ensured and/or demonstrated, that the project proponents can implement the project at this site (ownership, licenses, contracts etc.)?	1,2	The project was approved by the local Development and Reform Commission and the EIA of the proposed project was approved by the local Environmental Protection Bureau.	☑	☑
A.4.2.	*Category(ies) of project activity*				
A.4.2.1.	To which category(ies) does the project activity belonging to? Is the category correctly identified and indicated?	1,2	Yes, the project falls into scope 1, Energy industries (renewable/ non- renewable sources) as it deals with energy generation.	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
A.4.3.	*Technology to be employed by the project activity*				
A.4.3.1.	Does the technical design of the project activity reflect current good practices?	1,2	Yes, the project design reflects the current good practices based on the description in the feasibility study report and the investigation on site. It is a state-of-the-art hydropower station.	☑	☑
A.4.3.2.	Does the description of the technology to be applied provide sufficient and transparent input/ information to evaluate its impact on the greenhouse gas balance?	1,2	Yes, the project activity comprises the use of water power for the substitution of grid supplied electricity mainly from coal fired plants. Therefore four units of turbines and four units of generators matched with turbine with total installed capacity of 16MW are utilized. There is no doubt that this technology will reduce the GHG emissions significantly.	☑	☑
A.4.3.3.	Does the implementation of the project activity require any technology transfer from annex-I-countries to the host country(ies)?	1,2	No, it doesn't. There is no technology transfer from annex-I countries to China by the proposed project.	☑	☑
A.4.3.4.	Is the technology implemented by the project activity environmentally safe?	1,2	Yes. As the project is a hydro power project. It's clear that the technology implemented by the project activity is environmentally safe.	☑	☑
A.4.3.5.	Is the information provided in compliance with actual situation or planning?	1,2	Yes, it is.	☑	☑
A.4.3.6.	Does the project use state of the art technology and / or does the technology result in a significantly better performance than any commonly used technologies in the host country?	1,2	Because the technology of installing a new hydropower plant has been fully developed and successfully implemented over China for decades, the technology applied in the proposed project is not different compared to that of other similar hydropower plants.	☑	☑
A.4.3.7.	Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1,2	We do not expect that there will be a substitution because the project has been operational since 2007. The life time of the project is under normal circumstances longer than the crediting period	☑	☑
A.4.3.8.	Does the project require extensive initial training and maintenance efforts in order	1,2	With relevance to the CDM monitoring, a monitoring officer will receive training on the monitoring methodologies, procedures and	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
	to be carried out as scheduled during the project period?		archiving. Then, the monitoring officer will train the project staff in charge for CDM monitoring.		
A.4.3.9.	Is information available on the demand and requirements for training and maintenance?	1,2	The effort to train the employees initially and during the operation phase was described by the project owner during the audit and the demand and requirements were defined in written form.	☑	☑
A.4.3.10.	Is a schedule available for the implementation of the project and are there any risks for delays?	1,2,8 17,2 2,99, 106, 107,	The planning schedule in the past and for the future was clearly described by the project owner during the audit, but not included in the PDD. Corrective Action Request No.2: The time schedule of project implementation should be included in the PDD.	CAR 2	☑
A.4.4.	*Estimated amount of emission reductions over the chosen crediting period*				
A.4.4.1.	Is the form required for the indication of projected emission reductions correctly applied?	1,2	The project emission reductions are shown in chapter A.4.4 according to the guidelines. Corrective Action Request No.3: Chapter A.4.4 Table A.2 and Chapter B.6.4 Table B.6: the years column should be updated with Year 1, Year 2, Year 3, ..., Year 7 (including the dates from Sep. 1st to Aug. 31st) and the Emission Reduction values should be updated too. This way every year should have the same amount of ER.	CAR 3	☑
A.4.4.2.	Are the figures provided consistent with other data presented in the PDD?	1,2	Yes, they are. The yearly emission reduction is estimated to amount 55,501 tCO2e. The same figure is quoted throughout the PDD.	☑	☑
A.4.5.	*Public funding of the project activity*				
A.4.5.1.	Is the information provided on public funding provided in compliance with the actual situation or planning as available by the project participants?	1,2	According to the statement in A.4.5. of the PDD there is no public funding for the project activity. By reviewing the financial documents on-site this statement could be verified.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
A.4.5.2. Is all information provided consistent with the details given in remaining chapters of the PDD (in particular annex 2)?	1,2	Yes, it is consistent with the information provided in Annex 2.	☑	☑
B. Application of a baseline and monitoring methodology				
B.1. Title and reference of the approved baseline and monitoring methodology				
B.1.1. Are reference number, version number, and title of the baseline and monitoring methodology clearly indicated?	1,2	Yes, it is ACM0002/Version 07 along with the *Tool for the Demonstration and Assessment of Additionality (version 4*) and Tool to Calculate the Emission Factor for an Electricity System(version 1)	☑	☑
B.1.2. Is the applied version the most recent one and / or is this version still applicable?	1,2	Version 7 of ACM0002: "Consolidated baseline methodology for grid-connected electricity generation from renewable source" , version 4 of "the Tool for the Demonstration and Assessment of Additionality" and version 1 of Tool to Calculate the Emission Factor for an Electricity System are applied, and they are the most recent ones.	☑	☑
B.1.3. Does the methodology refer to the following tools with its latest approved versions: - Tool to calculate the emission factor for an electricity system - Tool for the demonstration and assessment of additionality - Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion		Yes, it does.	☑	☑
B.2. Justification of the choice of the methodology and why it is applicable to the project activity				
B.2.1. Is the applied methodology considered the most appropriate one?	1,2	Yes, the baseline and monitoring methodology ACM0002 version 7 is applicable to the proposed project, because the project meets	☑	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PDD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td></td><td>all the applicability criteria stated in the methodology:

1. The proposed Project activity involves an electricity capacity addition from a hydro power project;
2. The installed capacity is 16MW and the flooding surface area is 3,000m2,so the power density of the proposed project is 5333.3W/m2, greater than 4W/m2.
3. The proposed Project activity does not involve fuel switching from fossil fuels to renewable energy at the site of the project activity;
4. The geographic and system boundaries for the relevant electricity grid can be clearly identified and information on the characteristic of the grid is available.</td><td></td><td></td></tr>
<tr><td colspan="5">Fill in the required amount of sub checklists for applicability criteria as given by the methodology applied and comment at least every line answered with “No”</td></tr>
<tr><td>B.2.2. Criterion 1:
Type of electricity capacity addition by grid-connected renewable power generation

The following types are possible: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit.</td><td></td><td><table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Evidences provided in the PDD?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.2.3. Criterion 2 (in the case of hydro plants):

-The project activity is implemented in an existing reservoir, with no change in the volume of reservoir or

-The project activity is implemented in an</td><td></td><td><table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Evidences provided in the PDD?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
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<tr><th colspan="2">CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PDD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td>existing reservoir, where the volume of reservoir is increased and the power density of the project activity is greater than 4 W/m2 or

-The project activity results in new reservoirs and the power density of the power plant is greater than 4 W/m2.</td><td></td><td>The proposed project activity results in new reservoirs and power density is greater than 4W/m2.</td><td></td><td></td></tr>
<tr><td>B.2.4.</td><td>Criterion 3 (in the case of modification/retrofit in existing power plants):

5 years of historical data (or 3 years in the case of non hydro project activities) are available</td><td></td><td><table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>N/A</td></tr><tr><td>Compliance provable?</td><td>N/A</td></tr><tr><td>Evidences provided in the PDD?</td><td>N/A</td></tr><tr><td>Compliance verified?</td><td>N/A</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.2.5.</td><td>Criterion 4:
Defined electricity grid boundaries</td><td></td><td><table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Evidences provided in the PDD?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.2.6.</td><td>Criterion 5:
Approved inclusion in other methodologies (if applied only)</td><td></td><td>Not applicable.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.2.7.</td><td>Criterion 6:
Exclusion of fuel switching activities</td><td></td><td><table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Evidences provided in the PDD? Yes Compliance verified? Yes		
B.2.8. Criterion 7: Exclusion of biomass fired power plants		Applicability checklist / Yes / No Criterion discussed in the PDD? Yes Compliance provable? Yes Evidences provided in the PDD? Yes Compliance verified? Yes	☑	☑
B.2.9. Criterion 8: Exclusion of hydro power plants that result in new reservoirs or in the increase in existing reservoirs where the power density of the power plant is less than 4 W/m2.		Applicability checklist / Yes / No Criterion discussed in the PDD? Yes Compliance provable? Yes Evidences provided in the PDD? Yes Compliance verified? Yes	☑	☑
B.3. Description of the sources and gases included in the project boundary				
Integrate the required amount of sub-checklists for sources and gases as given by the methodology applied and comment on at least every line answered with "No"				
B.3.1. Source: Fugitive Emissions from non-condensable gases contained in geothermal steam (geothermal power plants only) Gas(es): CO_2, CH_4 Type: Project Emissions		Boundary checklist / Yes / No Source and gas(es) discussed by the PDD? N/A Inclusion / exclusion justified? N/A Explanation / Justification sufficient? N/A Consistency with monitoring plan? N/A The project consists of a grid-connected electricity generation from a hydropower station. Thus, B.3.1. is not applicable.	☑	☑
B.3.2. Source: Emissions from combustion of fossil fuels required to operate the geothermal power		Boundary checklist / Yes / No Source and gas(es) discussed by the PDD? N/A Inclusion / exclusion justified? N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
plant (geothermal power plants only) Gas(es): CO_2 Type: Project Emissions		Explanation / Justification sufficient? N/A Consistency with monitoring plan? N/A		
B.3.3. Source: Emissions from the reservoir (hydro power plants only) Gas(es): , CH_4 Type: Project Emissions		Boundary checklist / Yes / No Source and gas(es) discussed by the PDD? Yes Inclusion / exclusion justified? Yes Explanation / Justification sufficient? Yes Consistency with monitoring plan? Yes The power density of proposed project is greater than 10W/m2, thus emissions from the reservoir may be excluded.	☑	☑
B.3.4. Source: Emissions from electricity generation in fossil fuel fired power plants that is displaced due to the project activity Gas(es): CO_2 Type: Baseline Emissions		Boundary checklist / Yes / No Source and gas(es) discussed by the PDD? Yes Inclusion / exclusion justified? Yes Explanation / Justification sufficient? Yes Consistency with monitoring plan? Yes	☑	☑
B.3.5. Source: Emissions from electricity generation in fossil fuel fired power plants of any connected electricity system Gas(es): CO_2 Type: Baseline Emissions		Boundary checklist / Yes / No Source and gas(es) discussed by the PDD? Yes Inclusion / exclusion justified? Yes Explanation / Justification sufficient? Yes Consistency with monitoring plan? Yes	☑	☑
B.3.6. Source: Emissions from electricity generation in		Boundary checklist / Yes / No	CAR 4	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
	fossil fuel fired power plants of imported electricity (project electricity consumption) Gas(es): CO_2		Source and gas(es) discussed by the PDD? No Inclusion / exclusion justified? No Explanation / Justification sufficient? No Consistency with monitoring plan? No <u>Corrective Action Request No.4:</u> There are imports from the Central China power grid (according to information provided in the PDD), thus emissions from electricity generation in fossil fuel fired power plants of imported electricity have to be included into the project boundary.		
B.3.7.	Do the spatial and technological boundaries as verified on-site comply with the discussion provided by the PDD?		Yes. The project boundary for the proposed project is represented by the Southern China Power Grid. The Southern China Grid is a larger regional grid, which consists of four sub-grids: Guangdong, Guangxi, Yunnan and Guizhou. Furthermore the project boundary includes the project site.	☑	☑
B.4. Description of how the baseline scenario is identified and description of the identified baseline scenario					
B.4.1.	Is it clearly described that the baseline is represented by the combined margin of the grid the activity will be connected to?	1,2	Yes, the baseline is represented by the combined margin of the grid the activity will be connected to. It is the equivalent annually generated electricity supplied by the Southern China Power Grid.	☑	☑
B.4.2.	In case of any modification or retrofit of existing facilities: Is data available to determine the historic production level?	1,2	N/A	☑	☑
B.4.3.	In case of any modification or retrofit of existing facilities: Have conservative assumptions been applied in order to estimate the point in time when the existing equipment needs to be	1,2	N/A	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
	replaced?				
Changes required for methodology implementation in 2nd and 3rd crediting periods					
B.4.4.	Has the continued validity of the baseline been correctly assessed?		Not applicable.	☑	☑
B.4.5.	Has the baseline been updated with new data?		Not applicable.	☑	☑
B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity (assessment and demonstration of additionality):					
B.5.1.	Is evidence provided, that CDM has been considered seriously in the decision to proceed with the project activity (CDM decision before project start)?	1,2	Corrective Action Request No.5: Please refer to the evidence of consideration of CDM before the starting date of the project activity into chapter B.5. as requested by the CDM PDD guidelines.	CAR 5	☑
B.5.2.	Have realistic and credible alternatives been identified providing comparable outputs or services? (step 1a)	1,2	Yes, the project sponsor is a hydro project developer, then the possible alternatives to the project includes: • The proposed hydropower activity, undertaken without being registered as a CDM project activity; • New thermal fossil fuel fired power plant with equivalent annual power generation; • Other new renewable energy power plants with equivalent annual power generation. • The equivalent annual electricity is supplied by the Southern China Power Grid. The last alternative has been identified as the realistic and credible alternative.	☑	☑
B.5.3.	Is the project activity without CDM included in these alternatives? (step 1a)	1,2	Yes, it is included as first option.	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
B.5.4.	Is a discussion provided for all identified alternatives concerning the compliance with applicable laws and regulations? (step 1b)	1,2	The conclusion in Sub-step 1b is that only the alternative 2 is not in compliance with Chinese relevant laws and regulation.	☑	☑
B.5.5.	In case the PDD argues that specific laws are not enforced in the country or region: Is evidence available concerning that statement? (step 1b)	1,2	All the laws quoted in the PDD are enforced in this project; hence, this section is not applicable.	☑	☑
B.5.6.	In case of applying step 2 / investment analysis of the additionality tool: Is the analysis method identified appropriately (step 2a)?	1,2	3 analysis methods are provided according to the additionality tool. Because the proposed project generates economic benefits through the sales of electricity other than CDM revenue, therefore, the Option I (simple cost analysis) can't be taken. Moreover, the Option II (investment comparison analysis) only applies to projects where alternatives should be similar investment projects, how ever, in this case, the baseline scenario is the Southern China Grid; hence, Option II can't be adopted either. It deems that Option III (benchmark analysis) is the only applicable one.	☑	☑
B.5.7.	In case of Option I (simple cost analysis): Is it demonstrated that the activity produces no economic benefits other than CDM income?	1,2	The simple cost analysis is not applicable for the proposed project because the project activity will produce economic benefit (from electricity sale) other than CERs income.	☑	☑
B.5.8.	In case of Option II (investment comparison analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?	1,2	Option III is chosen for the investment analysis. So this section is not applicable.	☑	☑
B.5.9.	In case of Option III (benchmark analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?	1,2	Yes, the project IRR is selected as the most suitable financial indicator.	☑	☑
B.5.10.	In case of Option II or Option III: Is the	1,2,	Corrective Action Request No.6:	CAR 6	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
	calculation of financial figures for this indicator correctly done for all alternatives and the project activity?	23, 28,48,30, 32, 8992 ,95,96,97, 101, 102, 103, 104, 105	1) Include the variation of revenue of electricity sales instead of grid price as parameter into sensitive analysis. 2) Please justify why the CERs price is assumed to be 8 EUR. 3) The economic assessment presented in the feasibility study report and financial supplement report should be provided in English and delivered to the DOE. 4) IRR calculation spreadsheet should be delivered to the DOE, and all data quoted in the sheet should be carefully checked with the data source.		
B.5.11.	In case of Option II or Option III: Is the analysis presented in a transparent manner including publicly available proofs for the utilized data?	1,2	Yes, it is.	☑	☑
B.5.12.	In case of applying step 3 (barrier analysis) of the additionality tool: Is a complete list of barriers developed that prevent the different alternatives to occur?	1,2	Yes, a complete list of barriers have been developed and include: • The barrier of financial and investment environment • The barrier of uncertainty of electricity sale and grid price.	☑	☑
B.5.13.	In case of applying step 3 (barrier analysis): Is transparent and documented evidence provided on the existence and significance of these barriers?	1,2	<u>Corrective Action Request No.7:</u> Please submit documented evidence on the existence and significance of these barriers.	CAR 7	☑
B.5.14.	In case of applying step 3 (barrier analysis): Is it transparently shown that the execution of at least one of the alternatives is not prevented by the identified barriers?	1,2	It can not be assessed due to lack of evidence, please see B.5.13.	☑	☑
B.5.15.	Have other activities in the host country / region similar to the project activity been	1,2	Basic information about concerning existing hydropower stations similar to the proposed activity are given in Table B.5, section B.5. of the PDD.	CAR 8	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
	identified and are these activities appropriately analyzed by the PDD (step 4a)?		<u>Corrective Action Request No.8.</u> 1) The common practice analysis is not sufficient and related proofs are not available. Reference documents and data sources must be delivered to the DOE. 2) It is not clear why only these hydro plants that operated after 2000 and with installed capacity of 10- 50 MW are considered in the common practice analysis, project participants is requested to clarify it.		
B.5.16.	If similar activities are occurring: Is it demonstrated that in spite of these similarities the project activity would not be implemented without the CDM component (step 4b)?	1,2	See B.5.15, CAR 8.	See CAR 8	☑
B.5.17.	Is it appropriately explained how the approval of the project activity will help to overcome the economic and financial hurdles or other identified barriers?		Even though step 5 is not required anymore by the additionality tool (version 4), the PDD explains how the approval of the project activity helps to overcome the economic and financial hurdles.	☑	☑
B.6. Emissions reductions					
B.6.1.	*Explanation of methodological choices*				
B.6.1.1.	Is it explained how the procedures provided in the methodology are applied by the proposed project activity?	1, 2	The calculation of the emission reduction is applied according to the steps described in ACM0002: - Calculation of the Operating Margin Emission Factor - Calculation of the Build Margin Emission Factor - Calculation of the Combined Margin Emission Factor These steps are described in a transparent manner.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
B.6.1.2. Is every selection of options offered by the methodology correctly justified and is this justification in line with the situation verified on-site?	1, 2	Yes, every selection of options offered by the methodology is correctly justified and this justification is in line with the situation verified on-site.	☑	☑
B.6.1.3. Are the formulae required for the determination of project emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1,2	Not applicable The project activity is a hydropower project. Therefore, according to the ACM0002 methodology, greenhouse gas emissions from the project activity are zero, i.e. $PE_y = 0$.	☑	☑
B.6.1.4. Are the formulae required for the determination of baseline emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1,2	Yes, see Equation B.14 $BE_y = EG_y \times EF_y$ Yes, the formulae are correctly presented.	☑	☑
B.6.1.5. Is the choice of options to determine the emissions factor (OM, BM) justified in a suitable and transparent manner?	1,2	Yes, the choice of options to determine the Emission Factor is fully justified in the PDD.	☑	☑
B.6.1.6. Are the six steps as defined per the "Tool for calculation of emission factor for electrical systems" correctly applied by the project participants?		Yes, the six steps are correctly applied.	☑	☑
B.6.1.7. In case of alternative weighing factors for the Combined Margin: Is the quantification of the alternative weighing factor justified in a suitable and transparent manner?	1,2	Not applicable. The default weights for hydro power projects in the 6th version of ACM0002 (OM 0.5 and BM 0.5 respectively) are used.	☑	☑
B.6.1.8. In case of alternative weighing factors for the Combined Margin: Is the guidance for the PDD concerning the acceptability of alternative weights considered in the discussion?	1,2	See B.6.1.7.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
B.6.1.9. Are the formulae required for the determination of leakage emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1,2	No leakage is considered according to the methodology. Based on ACM0002, project participants do not need to consider leakage in applying ACM0002 methodology, i.e. Ly=0.	☑	☑
Tool to calculate project or leakage CO2 emissions from fossil fuel combustion				
B.6.1.10. Is the formula required for the determination of CO2 project emissions from fossil fuel combustion correctly presented, enabling a complete identification of parameter to be used and / or monitored		The power density of the project is greater than 10W/m2, hence, the CO2 project emission is zero.	☑	☑
B.6.1.11. Is option A (preferred approach) or option B chosen for the determination of the CO2 emission coefficient COEFi,y and is COEFi,y correctly determined?		Not applicable.	☑	☑
B.6.1.12. Are formulae required for the determination of emission reductions correctly presented?	1,2	Yes, see Equation B.11 $ER_y = BE_y - PE_y - L_y$	☑	☑
B.6.2. Data and parameters that are available at validation				
B.6.2.1. Is the list of parameters presented in chapter B.6.2 considered to be complete with regard to the requirements of the applied methodology?	1,2	Yes. A list of parameters is presented according to ACM0002.	☑	☑
B.6.2.2. Is the choice of ex-ante or ex-post vintage of OM and BM factors clearly specified in the PDD?	1,2	For the calculation of the emission reductions the ex-ante approach has been used.	☑	☑
Fill in the required amount of sub checklists for monitoring parameter and comment any line answered with “No”				

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PDD in GSP</th><th>Final PDD</th></tr>
<tr><td>B.6.2.3. Parameter Title: GWP_{CH4} Global warming potential of methane valid for the relevant commitment period (tCO2/tCH4)</td><td></td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.4. Parameter Title: $EG_{historical}$ (only applicable to modification/retrofit of an existing grid-connected renewable power plant/unit)
Average of historical electricity delivered by the existing facility to the grid (MWh)</td><td></td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table>The project is a new hydropower plant, hence, this parameter is not applicable.</td><td>☑</td><td>☑</td></tr>
</table>

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PDD in GSP</th><th>Final PDD</th></tr>
<tr><td>B.6.2.5. Parameter Title: $DATE_{BaselineRetrofit}$ (only applicable to modification/retrofit of an existing grid-connected renewable power plant/unit)
Point in time when the existing equipment would need to be replaced in the absence of the project activity</td><td></td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table>The project is a new hydropower plant, hence, this parameter is not applicable.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.6. Parameter Title: EF_{Res} (only applicable to hydro-power plants with reservoir)
Default emission factor for emissions from reservoirs (kgCO2e/MWh)</td><td></td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table>The project is a new hydropower plant with power density of 5333.33W/m2 that is greater than 10W/m2, hence, no project emission is considered according to the applied methodology, thus, this parameter is not applicable.</td><td>☑</td><td>☑</td></tr>
</table>

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<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PDD in GSP</th><th>Final PDD</th></tr>
<tr><td>B.6.2.7. Parameter Title: CAP_{BL} (W) (only applicable to modification/retrofit of an existing grid-connected renewable power plant/unit)
Installed capacity of the hydro power plant before the implementation of the project activity. For new hydro power plants, this value is zero.</td><td></td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table>The project is a new hydropower plant, hence, this parameter is not applicable.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.8. Parameter Title: A_{BL} (only applicable to hydropower plant projects with reservoir)
Area of the reservoir measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m2). For new reservoirs, this value is zero (m^2).</td><td>1,2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.9. Parameter Title:
Emission factor of the grid (EF_{CM} in tCO_2/MWh)</td><td>1,2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Measurement method correctly described? — Yes Emission factor of the grid is calculated as a combined margin: the weighted average of the operating margin emission factor ($EF_{OM,y}$) and the build margin emission factor ($EF_{BM,y}$).		
B.6.2.10. Parameter Title: Operating margin (EF_{OM} in tCO_2/MWh) emission factor of the grid		Data Checklist — Yes / No Title in line with methodology? — Yes Data unit correctly expressed? — Yes Appropriate description? — Yes Source clearly referenced? — Yes Correct value provided? — Yes Has this value been verified? — Yes Choice of data correctly justified? — Yes Measurement method correctly described? — Yes The simple OM method was chosen to calculate the OM.	☑	☑
B.6.2.11. Parameter Title: Build margin (EF_{BM}intCO_2/MWh) emission factor of the grid		Data Checklist — Yes / No Title in line with methodology? — Yes Data unit correctly expressed? — Yes Appropriate description of parameter? — Yes Source clearly referenced? — Yes Correct value provided? — Yes Has this value been verified? — Yes Choice of data correctly justified? — Yes Measurement method correctly described? — Yes $EF_{BM,y}$ is calculated as the generation weighted average emission factor (measured in tCO_2e/MWh) of a sample of *m* power plants.	☑	☑

<table>
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<tr><td>B.6.2.12. Parameter Title: $FC_{i,m,y}$, $FC_{i,y}$, $FC_{i,j,y}$, $FC_{i,k,y}$, $FC_{i,n,y}$ and $FC_{i,n,h}$
Amount of fossil fuel type i consumed by power plant / unit m,j,k or n (or in the project electricity system in case of $FC_{i,y}$) in year y or hour h (mass or volume unit)</td><td></td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table>
Fuel consumption of thermal power plants: *China Energy Statistical Yearbook* (2004-2006).</td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.13. Parameter Title: $NCV_{i,y}$
Net calorific value (energy content) of fossil fuel type i in year y (GJ / mass or volume unit)</td><td>1,2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.14. Parameter Title: $EF_{CO2,i,y}$ and $EF_{CO2,m,i,y}$
CO2 emission factor of fossil fuel type i in year y (tCO2/GJ)</td><td>1,2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Choice of data correctly justified? — Yes Measurement method correctly described? — Yes		
B.6.2.15. Parameter Title: $EG_{m,y}$, EG_y, $EG_{j,y}$, $EG_{k,y}$ and $EG_{n,h}$ Net electricity generated and delivered to the grid by power plant / unit m,j,k or n (or in the project electricity system in case of EGy) in year y or hour h (MWh)	1,2	Data Checklist — Yes / No Title in line with methodology? — Yes Data unit correctly expressed? — Yes Appropriate description of parameter? — Yes Source clearly referenced? — Yes Correct value provided? — Yes Has this value been verified? — Yes Choice of data correctly justified? — Yes Measurement method correctly described? — Yes A coal-fired power plant with a total installed capacity of 600MW is assumed to be the commercially available best practice technology in terms of efficiency. The estimated coal consumption of such a National Sub-critical Power Station with a capacity of 600MW is 343.33gce/kWh, which corresponds to an efficiency of 35.82% for electricity generation.	☑	☑
B.6.2.16. Parameter Title: $EG_{PJ,h}$ Electricity displaced by the project activity in hour h of year y (in MWh) (only applicabe for the dispatch data OM)		Data Checklist — Yes / No Title in line with methodology? — N/A Data unit correctly expressed? — N/A Appropriate description of parameter? — N/A Source clearly referenced? — N/A Correct value provided? — N/A Has this value been verified? — N/A Choice of data correctly justified? — N/A Measurement method correctly described? — N/A	☑	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PDD in GSP</th><th>Final PDD</th></tr>
<tr><td>B.6.2.17. Parameter Title: $\eta_{m,y}$
Average net energy conversion efficiency of power unit m in year y</td><td>1,2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>Parameter Title: A_{PJ} (only applicable to hydropower plant projects with reservoir)Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full.</td><td></td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table>
Parameter “surface area of full reservoir level” is a monitored parameter.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.18. Parameter Title:
fraction of time with low costs /must run plant at the margin
(for simple adjusted OM only)</td><td></td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr></table></td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
			Choice of data correctly justified? N/A Measurement method correctly described? N/A		
B.6.3.	*Ex-ante calculation of emission reductions*				
B.6.3.1.	Is the projection based on the same procedures as used for future monitoring?	1,2	Yes, it is.	☑	☑
B.6.3.2.	Are the GHG calculations documented in a complete and transparent manner?	1,2	Yes, they are	☑	☑
B.6.3.3.	Is the calculation of the operating margin and build margin emission factors documented electronically in a spreadsheet with the relevant information as defined per the "Tool for calculation of emission factor for electrical systems"? Has this spreadsheet been submitted to the validation team?		Yes, it is documented electronically, but the spreadsheet has not been submitted to the validation team. Corrective Action Request No.9. Please deliver the spreadsheet of calculation of the operating margin and build margin emission factors to the DOE.	CAR 9	☑
B.6.3.4.	Is the data provided in this section consistent with data as presented in other chapters of the PDD?	1,2	Yes, it is.	☑	☑
B.6.4.	*Summary of the ex-ante estimation of emission reductions*				
B.6.4.1.	Will the project result in fewer GHG emissions than the baseline scenario?	1,2	Yes, depending on the project nature there are no project emissions.	☑	☑
B.6.4.2.	Is the form/table required for the indication of projected emission reductions correctly applied?	1,2	Yes, the form is correctly applied.	☑	☑
B.6.4.3.	Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting	1,2	The life time of the project is expected to be 21 years and the renewable crediting period of max 7 years with potential for 2 renewals is chosen. The yearly emission reduction and total emis-	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
	period?		sion reductions indicated in B.6.4. of the PDD.		
B.6.4.4.	Is the data provided in this section in consistency with data as presented in other chapters of the PDD?	1,2	Yes, it is	☑	☑
B.7. Application of the monitoring methodology and description of the monitoring plan					
B.7.1.	*Data and parameters monitored*				
B.7.1.1.	Is the list of parameters presented by chapter B.7.1 considered to be complete with regard to the requirements of the applied methodology?	1,2	Because the ex-ante approach is adopted, the net electricity fed to the grid is required to be monitored. This parameter has been included in table B.7.1 in the PDD.	☑	☑
Integrate the required amount of sub-checklists for monitoring parameter and comment on any line answered with "No"					
B.7.1.2.	Parameter Title: EGy Electricity supplied by the project activity to the grid (in MWh)	1,2	Monitoring Checklist / Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided for estimation? Yes Has this value been verified? Yes Measurement method correctly described? Yes Correct reference to standards? Yes Indication of accuracy provided? Yes QA/QC procedures described? Yes QA/QC procedures appropriate? Yes	☑	☑
B.7.1.3.	Parameter Title: TEGy Total electricity produced by the project	1,2	Monitoring Checklist / Yes / No	CAR 10	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PDD in GSP</th><th>Final PDD</th></tr>
<tr><td>activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y (in MWh).</td><td></td><td>
<table>
<tr><td>Title in line with methodology?</td><td>Yes</td></tr>
<tr><td>Data unit correctly expressed?</td><td>Yes</td></tr>
<tr><td>Appropriate description of parameter?</td><td>Yes</td></tr>
<tr><td>Source clearly referenced?</td><td>Yes</td></tr>
<tr><td>Correct value provided for estimation?</td><td>No</td></tr>
<tr><td>Has this value been verified?</td><td>Yes</td></tr>
<tr><td>Measurement method correctly described?</td><td>Yes</td></tr>
<tr><td>Correct reference to standards?</td><td>Yes</td></tr>
<tr><td>Indication of accuracy provided?</td><td>Yes</td></tr>
<tr><td>QA/QC procedures described?</td><td>Yes</td></tr>
<tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr>
</table>
<u>Corrective Action Request No.10</u>
The value provided for estimation is not correct, please revise it.</td><td></td><td></td></tr>
<tr><td>B.7.1.4. Parameter Title: $EF_{grid,CM,y}$
Combined margin CO2 emission factor for grid connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system” (tCO2/MWh)</td><td></td><td>Not applicable, as this protocol refers to the ex-ante determination of CM.
<table>
<tr><th>Monitoring Checklist</th><th>Yes / No</th></tr>
<tr><td>Title in line with methodology?</td><td>N/A</td></tr>
<tr><td>Data unit correctly expressed?</td><td>N/A</td></tr>
<tr><td>Appropriate description of parameter?</td><td>N/A</td></tr>
<tr><td>Source clearly referenced?</td><td>N/A</td></tr>
<tr><td>Correct value provided for estimation?</td><td>N/A</td></tr>
<tr><td>Has this value been verified?</td><td>N/A</td></tr>
<tr><td>Measurement method correctly described?</td><td>N/A</td></tr>
<tr><td>Correct reference to standards?</td><td>N/A</td></tr>
<tr><td>Indication of accuracy provided?</td><td>N/A</td></tr>
<tr><td>QA/QC procedures described?</td><td>N/A</td></tr>
<tr><td>QA/QC procedures appropriate?</td><td>N/A</td></tr>
</table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.7.1.5. Parameter Title: PEFC,j,y
CO2 emissions from fossil fuel combustion in process j during the year</td><td></td><td>
<table>
<tr><th>Monitoring Checklist</th><th>Yes / No</th></tr>
<tr><td>Title in line with methodology?</td><td>N/A</td></tr>
</table></td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
y (tCO2/yr). Calculated as per the latest version of the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion"		Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A		
B.7.1.6. Parameter Title: Cap_{PJ} (only applicable to hydropower plant projects) Installed capacity of the hydro power plant after the implementation of the project activity (W).	1,2	Monitoring Checklist — Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided for estimation? Yes Has this value been verified? Yes Measurement method correctly described? Yes Correct reference to standards? Yes Indication of accuracy provided? Yes QA/QC procedures described? Yes QA/QC procedures appropriate? Yes	☑	☑
B.7.1.7. Parameter Title: A_{PJ} (only applicable to hydropower plant projects with reservoir) Area of the reservoir measured in the surface of the water, after the implemenation of the project activity, when the reservoir is full (m^2).	1,2	Monitoring Checklist — Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided for estimation? Yes Has this value been verified? Yes	☑	☑

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Measurement method correctly described? Yes Correct reference to standards? Yes Indication of accuracy provided? Yes QA/QC procedures described? Yes QA/QC procedures appropriate? Yes		
B.7.1.8. Parameter Title: $w_{Main,CO2}$ Average mass fraction of CO_2 in the produced steam tCO2/t steam (for geothermal projects only)		Monitoring Checklist: Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A	☑	☑
B.7.1.9. Parameter Title: $w_{Main,CH4}$ Average mass fraction of CH_4 in the produced steam (tCH4/t steam). for geothermal projects only)		Monitoring Checklist: Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A	☑	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PDD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td></td><td><table><tr><td>QA/QC procedures described?</td><td>N/A</td></tr><tr><td>QA/QC procedures appropriate?</td><td>N/A</td></tr></table></td><td></td><td></td></tr>
<tr><td>B.7.1.10. Parameter Title: $M_{S,y}$
Quantity of steam produced during the year y.
(for geothermal projects only)</td><td></td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided for estimation?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr><tr><td>Correct reference to standards?</td><td>N/A</td></tr><tr><td>Indication of accuracy provided?</td><td>N/A</td></tr><tr><td>QA/QC procedures described?</td><td>N/A</td></tr><tr><td>QA/QC procedures appropriate?</td><td>N/A</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td colspan="5">Parameters related to the “Tool to calculate project or leakage CO2 emissions from fossil fuel combustion”</td></tr>
<tr><td>B.7.1.11. Parameter Title:
Quantity of fuel type i combusted in process j during the year y
FCi,j,y</td><td></td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided for estimation?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr><tr><td>Correct reference to standards?</td><td>N/A</td></tr><tr><td>Indication of accuracy provided?</td><td>N/A</td></tr></table></td><td>☑</td><td>☑</td></tr>
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<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PDD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td></td><td><table><tr><td>QA/QC procedures described?</td><td>N/A</td></tr><tr><td>QA/QC procedures appropriate?</td><td>N/A</td></tr></table></td><td></td><td></td></tr>
<tr><td>B.7.1.12. Parameter title:
Weighted average mass fraction of carbon in fuel type i in year y
$W_{C,I,y}$</td><td></td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided for estimation?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr><tr><td>Correct reference to standards?</td><td>N/A</td></tr><tr><td>Indication of accuracy provided?</td><td>N/A</td></tr><tr><td>QA/QC procedures described?</td><td>N/A</td></tr><tr><td>QA/QC procedures appropriate?</td><td>N/A</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.7.1.13. Parameter title:
Weighted average density of fuel type i in year y
$\rho_{i,y}$</td><td></td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided for estimation?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr><tr><td>Correct reference to standards?</td><td>N/A</td></tr><tr><td>Indication of accuracy provided?</td><td>N/A</td></tr><tr><td>QA/QC procedures described?</td><td>N/A</td></tr><tr><td>QA/QC procedures appropriate?</td><td>N/A</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.7.1.14. Parameter title:
Weighted average net calorific value of fuel type i in year y</td><td></td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr></table></td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
NCVi,y		Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A		
B.7.1.15. Parameter title: Weighted average CO2 emission factor of fuel type i in year y $EF_{CO2,i,y}$		Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A	☑	☑
B.7.2. Description of the monitoring plan				
B.7.2.1. Is the operational and management structure clearly described and in compliance with the envisoned situation?	1,2	Yes, it is. See B.7.2 of the PDD.	☑	☑
B.7.2.2. Are responsibilities and institutional arrangements for data collection and archiving clearly provided?	1,2	Yes. The project owner is responsible for recording this set of data. Electricity sales invoices will also be obtained as an additional check. Data records will be archived for 2 years following the end	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		of the crediting period. A chief monitoring officer will be appointed by the project owner. See B.7.2.		
B.7.2.3. Does the monitoring plan provide current good monitoring practice?	1,2	Yes, it is. However, the explanation on what EGmn,y and PRmn mean is not very clear. Corrective Action Request No.11: Please provide information in detail in the PDD what EGmn,y and PRmn mean.	CAR 11	☑
B.7.2.4. If applicable: Does annex 4 provide useful information enabling a better understanding of the envisoned monitoring provisions?	1,2	Yes. The annex 4 provide the useful information.	☑	☑
B.8. Date of completion of the application of the baseline study and monitoring methodology an the name of the responsible person(s)/entity(ies)				
B.8.1. Is there any indication of a date when the baseline was determined?	1,2	Yes, the baseline determination is dated 2007-12-25.	☑	☑
B.8.2. Is this consistent with the time line of the PDD history?	1,2	Yes, it is. See also A.1.3.	☑	☑
B.8.3. Is the information on the person(s) / entity(ies) responsible for the application of the baseline and monitoring methodology provided consistent with the actual situation?	1,2	Beijing Tianqing Power International CDM Consulting Co.,Ltd determined the monitoring methodology.	☑	☑
B.8.4. Is information provided whether this person / entity is also considered a project participant?	1,2	The above mentioned body is no project participants.	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
C. Duration of the project activity / crediting period					
C.1. Duration of the project activity					
C.1.1.	Are the project's starting date and operational lifetime clearly defined and reasonable?	1,2	The starting date of construction is given as 06/03/2006 and the operational lifetime is expected to be 25 years. Corrective Action Request No.12: According to the document provided by the project owner, the starting date of construction should be Apr.1, 2006 instead of Mar.6, 2006, please correct it.	CAR 12	☑
C.2. Choice of the crediting period and related information					
C.2.1.	Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	1,2	7 years with potential for 2 renewals is chosen as the crediting period, because the expected operational lifetime of the project activity is 25 years.	☑	☑
D. Environmental impacts					
D.1. Documentation on the analysis of the environmental impacts, including transboundary impacts					
D.1.1.	Has the analysis of the environmental impacts of the project activity been sufficiently described?	1,2, 11, 12,	Yes, the environmental impacts of the project activity such as dust, interference with communication, radiation, and water usage have been clearly described.	☑	☑
D.1.2.	Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been approved?	1,2, 11, 12,	Yes, EIA is a must in the P. R. China for new hydro power projects. The EIA of the proposed project was approved by the local Environment Protection Bureau	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
D.1.3. Will the project create any adverse environmental effects?	1,2, 11, 12,	Referred to the EIA and the approval of EIA, the project will create limited negative environmental impacts.	☑	☑
D.1.4. Were transboundary environmental impacts identified in the analysis?	1,2, 11, 12,	There is no trans-boundary impact described in EIA report or approval of EIA. Corrective Action Request No.13: Please mention in the PDD that no transboundary environmental impacts are involved with the project activity.	CAR 13	☑
D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party				
D.2.1. Have the identified environmental impacts been addressed in the project design sufficiently?	1,2, 11, 12,	Refer to the EIA and the approval of EIA, there is no adverse environmental impact from the project activity.	☑	☑
D.2.2. Does the project comply with environmental legislation in the host country?	1,2, 11, 12,	Yes, the project is in conformity with the environmental legislation of the P. R. China and the EIA has been approved by authorized organization.	☑	☑
E. Stakeholders' comments				
E.1. Brief description how comments by local stakeholders have been invited and compiled				
E.1.1. Have relevant stakeholders been consulted?	1,2, 21, 27, 28	In order to comprehend the opinions and advices of this project from all stakeholders, also the residues of the areas which probably be affected, the project owner had distributed questionnaires for local residents to investigate the suggestion of them on the construction of Jinping Ladeng River Hydropower Station, including the impact on society, economy and Manufacture.	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
			After that, a special stakeholder consultation meeting of the project was organized at the boardroom of Lvshui River Power Plant, Yunnan Province at PM 14:30 ~ 18:00 on Jul. 27, 2007, to investigate opinions of all the potential stakeholders, such as local residents and so on, aiming at collecting advice on the influence imposed on the local society, economy, daily life etc for the project broadly. In order to make the potential stakeholders to receive information of the meeting, Yingjiang Menglang Hydropower Co., Ltd published a bulletin for the meeting of stakeholders on the newspaper of Honghe Daily and via the website of www.tqcdmchina.com on Jul. 25, 2007. In the bulletin, the companies noticed that all the potential stakeholders could know the detailed information on the project. On the meeting, the project owner and the consultant invited the participants in the meeting to express their comments and concerns about the project and CDM		
E.1.2.	Have appropriate media been used to invite comments by local stakeholders?	1,2, 21, 27, 28	Questionnaires have been used to invite comments by local stakeholders.	☑	☑
E.1.3.	If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	1,2, 21, 27, 28	There are no regulations/laws in China for carrying out the stakeholder consultation process for this project activity.	☑	☑
E.1.4.	Is the undertaken stakeholder process that was carried out described in a complete and transparent manner?	1,2, 21, 27, 28	Yes. the process is described in a complete and transparent manner.	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
E.2. Summary of the comments received					
E.2.1.	Is a summary of the stakeholder comments received provided?	1,2, 21, 27, 28	Yes, a summary of the stakeholder comments received was provided.	☑	☑
E.3. Report on how due account was taken of any comments received					
E.3.1.	Has due account been taken of any stakeholder comments received?	1,2, 21, 27, 28	Referring to the PDD and filled questionnaires which were gathered from participants and reviewed by the auditor on site, almost all stakeholder comments are positive	☑	☑
F. Annexes 1 – 4					
Annex 1: Contact Information					
F.1.1.	Is the information provided consistent with the one given under section A.3?	1,2	Yes, it is.	☑	☑
F.1.2.	Is the information on all private participants and directly involved Parties presented?	1,2	Yes, it is.	☑	☑
Annex 2: Information regarding public funding					
F.1.3.	Is the information provided on the inclusion of public funding (if any) in consistency with the actual situation presented by the project participants?	1,2	No public funding is involved in this project activity.	☑	☑
F.1.4.	If necessary: Is an affirmation available that any such funding from Annex-I-	1,2	N.A., see F.1.3.	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
	countries does not result in a diversion of ODA?				
Annex 3: Baseline information					
F.1.5.	If additional background information on baseline data is provided: Is this information consistent with data presented by other sections of the PDD?	1,2	Yes, the information is consistent with data presented by other section of the PDD.	☑	☑
F.1.6.	Is the data provided verifiable? Has sufficient evidence been provided to the validation team?	1,2	Yes, the data provided is verifiable, and evidence has been provided to the validation team.	☑	☑
F.1.7.	Does the additional information substantiate / support statements given in other sections of the PDD?	1,2	Yes, it does.	☑	☑
Annex 5: Monitoring information					
F.1.8.	If additional background information on monitoring is provided: Is this information consistent with data presented in other sections of the PDD?	1,2	Additional background information on monitoring is provided.	☑	☑
F.1.9.	Is the information provided verifiable? Has sufficient evidence been provided to the validation team?	1,2	Yes. The information provided is verifiable. Sufficient evidence has been provided to the validation team.	☑	☑
F.1.10.	Do the additional information and / or documented procedures substantiate / support statements given in other sections of the PDD?	1,2	The additional information substantiates statements given in other sections of the PDD.	☑	☑

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Table 2 Resolution of Corrective Action and Clarification Requests

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
Corrective Action Request No.1 Please provide the following information in the Table of A.3 of the PDD: *) In accordance with CDM modalities and procedures, at the time of making the CDM-PDD public at the stage of validation, a party involved may not have provided its approval. At the time of requesting registration, the approval by the party(ies) involved is required.	A.3.1	This paragraph has been added in the Table of A.3 of the PDD.	☑ The required information is correctly supplied in the PDD.
Corrective Action Request No.2: The time schedule of project implementation should be included in the PDD.	A.4.3.10	In November 2005, FSR of the project was written by Research & Design Institute of Sinohydro Engineering Bureau 14. In December 2005, the Honghe Prefecture Development and Plan Committee organized an expert team to assess the FSR. In the Assessment Opinion of FSR, the experts suggested reassessing the project budget and revising the financial analysis of FSR due to the huge diversion project, complex geological condition, and so on. According to these factors, the project owner entrusted the same institute to remake the investment budget and the financial analysis, which is FAR. The FAR (Local Development and Reform Commission has approved FAR on July 14, 2006.) was completed in January 2006, it has a low IRR (7.87%). As per the CDM information and low IRR, the project owner held the directorate meeting immediately on January 20, 2006 and finally decided to apply for CDM to solve the economic and financial barriers. Almost at the same time, the project owner required local government to support the project apply for CDM, and local government gave the project owner the response in the	☑ The timeline evidence has been supplied to DOE and the timeline is consistent with the evidences. See IRl No.8 for the FSR. IRL No. 107 for the Assessment Opinion IRL No. 17 for the directorate decision IRL No. 99 for the statement of ENEL IRL No. 106 for the Framework Agreement.

		following month that they supported the project to apply for CDM. Soon, the project owner consigned Tianqing Power to assist the CDM applying work on March 11, 2006. Only after all these were finished, the project owner signed the construction contract on March 14, 2006, which is the earliest starting date of the project. Therefore, it can be concluded that the project owner was in an early stage aware about the potential of CDM to support its activities. CDM has been considered seriously in the decision to implement the project activity. Then the project owner started supplying the relevant documents to Tianqing Power after the FAR was approved on July 14, 2006. During this period, Tianqing Power was positively looking for a buyer for the project. In April 2006, Tianqing Power recommended the project to ENEL, ENEL refused to sign the LoI for the project because ENEL had no further plan to cooperate on hydropower stations with Tianqing Power. But considering the project was a high quality CDM project, ENEL promised to introduce international buyers for the project in August 2006. Meanwhile, TQ Power was looking for other buyers. By October 2006, ENEL recommended Tianqing Power to Edison Spa (Edison). After two months, contact people from Edison and Tiangqing Power started negotiating Cooperation Framework Agreement, and the information of the project was offered to Edison. After few months' negotiation on Cooperation Framework Agreement, it was signed by Tianqing Power and Edison on April 4, 2007. After reviewing the draft PDD and 3-month document due diligence (started from July 2007), Edison organized a site-visit (project Due Diligence) from October 23 to 26, 2007, and signed Letter of Intent with the project	

		owner on October 25, 2007. At the same time, the project was submitted to Chinese DNA in August 2007 and approved as a CDM project on October 16, 2007 (See the website: http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1538.pdf), and then Chinese LoA (paper-pattern) was acquired in January, 2008. Afterwards, the project was submitted for GSP in February 2008. From then on, the process of CDM application was going on smoothly. See details in the PDD.	
Corrective Action Request No.3: Chapter A.4.4 Table A.2 and Chapter B.6.4 Table B.6: the years column should be updated with Year 1, Year 2, Year 3, ..., Year 7 (including the dates from Sep. 1st to Aug. 31st) and the Emission Reduction values should be updated too. This way every year should have the same amount of ER.	A.4.4.1	Chapter A.4.4 Table A.4 and Chapter B.6.4 Table B.6: the years column and the relevant emission reduction have already been revised.	☑ The form is correctly adopted.
Corrective Action Request No.4: There are imports from the Central China power grid (according to information provided in the PDD), thus emissions from electricity generation in fossil fuel fired power plants of imported electricity have to be included into the project boundary.	B.3.6	There is net imported power to the China Southern Power Grid from the Central China Grid, so the emissions from electricity generation in fossil fuel fired power plants of imported electricity are also identified as the project boundary. The PDD have been revised.	☑ The calculation has been correctly revised.
Corrective Action Request No.5: Please refer to the evidence of consideration of CDM before the starting date of the project activity into chapter B.5. as requested by the CDM PDD guidelines.	B.5.1	The evidence of consideration of CDM before the starting date of the project activity is provided in Section B.5.	☑ The directorate decision is indicated as evidence for early CDM consideration
Corrective Action Request No.6:	B.5.10	1) Both annual power generation and grid price have been included for sensitivity analysis in PDD.	☑ The sensitivity analysis is

1) Include the variation of revenue of electricity sales instead of grid price as parameter into sensitive analysis. 2) Please justify why the CERs price is assumed to be 8 EUR. 3) The economic assessment presented in the feasibility study report and financial supplement report should be provided in English and delivered to the DOE. 4) IRR calculation spreadsheet should be delivered to the DOE, and all data quoted in the sheet should be carefully checked with the data source.		2) The CERs price in ERPA is 8 EUR, and the CER price in 2006, when the investment decision was made is 6EUR, the PDD have been revised. 3) The economic data presented in the feasibility study report and financial supplement report has been translated into English and will be supplied to DOE. 4) The IRR calculation spreadsheet has been submitted to DOE. All the data quoted in the sheet has been checked with the data source. Inter alia: The installed capacity of 16 MW is from the Supplemental Financial Appraisal Report (FAR) approved by local Development Revolution Committee, which can be cross-checked by the purchase contact of turbine and generator units. The document has been submitted to DOE. The annual utilization hours of 4,807 hours (for Ladeng dam) and 4,715 hours (for Ganwa dam) is from the FSR, which can be cross-checked by Water Resources Appraisal Report. The document has been submitted to DOE. Coefficient of effective electricity of 90% is from the FAR, which can be cross-checked by Economic Evaluation Code for Small Hydropower Project (SL16-95). Based on the document SL16-95. For run-of-river hydropower station, the coefficient of effective electricity should be 70%-90%, and the most conservative value of 90% is employed by the project. The document has been submitted to DOE. Power consumption by the plant rate of 0.25% and transmission lost rate of 4% are from the FAR, which can be cross-checked by the regulation of development	correctly done with annual power generation and grid price. The main parameters in the IRR calculation are cross-checked by the evidence from the third party. The annual operation hours have been cross-checked by the Water Resource Appraisal report. See IRL No.98. The coefficient of 90% is suitable according to the Economic Evaluation Code for Small Hydropower Project (SL16-95). However, even if the coefficient factor is chosen as 100%, the IRR of the proposed project activity is still lower than the benchmark. The annual operation cost can be cross-checked with files supplied. See IRL No.96 for salary sheet. See IRl No.100-105 for the regulations for cross-check.

		programming of electrical power in the region mainly supplied by rural hydropower (SL22-92). In (SL22-92), the rate of power consumption by the plant is 5%, and the rate of transmission lost is lower than 11%. Thus this two data quoted in the IRR calculation spreadsheet is conservative. Grid price of 0.18 Yuan RMB/kWh is from the FAR, therefore the price is reasonable at the time of the investment decision. According to the Power Purchase Agreement in 2008, the actual average grid price is 0.2037 Yuan RMB/kWh, even the grid price is 0.2037 Yuan RMB/kWh, and the IRR still can not reach the benchmark of 10%. The operation period of 25 years is from the FAR, which can be cross-checked by Economic Evaluation Code for Small Hydropower Project (SL16-95), which indicated the operation period is 20 years, therefore, the 25 years employed by the project is conservative. The document has been submitted to DOE. Total static investment of 8,502.03 ten thousand Yuan RMB are from the FAR, which can be cross-checked by the Financial Audit Report (which indicated the actual investment is 90,925,374.49Yuan RMB) issued by the authoritative of an independent third party. Thus the total static investment of 8,502.03 ten thousand Yuan RMB employed in the IRR calculation spreadsheet is conservative. For the annual operating cost: ✧ Number of employee of 16 is from the FAR, the staff number is 48-79 according to Economic Eval-	

		uation Code for Small Hydropower Project (SL16-95), thus the staff number in IRR calculation spreadsheet is conservative. ✧ The value of salary and welfare of the staff is 241,800 Yuan RMB in the IRR calculation spreadsheet, but the actual value is 325,944 Yuan RMB (exclude welfare), which is calculated based on the salary bill. The estimated operation and maintenance is 1,805,100 Yuan RMB in IRR calculation spreadsheet, and the actual value is 1,985,360 Yuan RMB. According to Agreement of Commission Management, the operation and maintenance cost is 0.026 Yuan RMB/kWh, and base on the FSR, the power generation is 76,360,000 kWh, therefore the actual operation and maintenance cost is 1,985,360 Yuan RMB. Therefore, the lower value used in the IRR calculation is conservative. ✧ The value of insurance cost is 240,000 Yuan RMB in the IRR calculation spreadsheet, and the actual value is 190,682 Yuan RMB according to the insurance trade invoice. ✧ Water charge of 0.004 Yuan RMB is from the FAR, which can be cross-checked by the governmental regulation. The relevant evidence had been submitted to DOE. Therefore, the actual operating cost is 2,765,226 Yuan RMB, which is higher than the designed value in the PDD. Therefore, the annual operating cost used in the PDD is conservative. VAT rate of 6% is from the FAR, which can be cross-checked by the Circular on Several Questions of Value	

		Added Tax by Taxation Bureau of Yunnan Province. Yunshuiliuzi[1994]53, the website is as follow: http://www.yn.gov.cn/yunnan,china/78541422713634816/20080312/1165654.html Additional urban construction tax of 1% is from the FAR, which can be cross-checked by the Temporary rules on city maintenance and construction tax by People's Republic of China. Guofa[1985]19 1 . Compared with the actual situation of 5%, the additional urban construction tax of 1% applied in financial analysis is conservative. Education surcharges of 3% are from the FAR, which can be cross-checked by the decision about modifying the <The Temporary Regulation on Levying Education surcharges > by the State Council (2005). State Council order No. 448, the website is as follow: http://www.chinacourt.org/flwk/show1.php?file_id=104821 Compared with the actual situation of 5%, the education surcharges of 3% applied in financial analysis is conservative. From description above, all the data quoted in the IRR calculation spreadsheet are reasonable and conservative.	

<u>Corrective Action Request No.7:</u> Please submit documented evidence on the existence and significance of these barriers.	B.5.13	The barriers do exist, but it is too difficult for project owner to demonstrate it. Thus step 3 are deleted as Step 2 is enough to demonstrate its additionality.	☑ The additionality of the proposed project activity is demonstrated via step 2.
<u>Corrective Action Request No.8.</u> 1) The common practice analysis is not sufficient and related proofs are not available. Reference documents and data sources must be delivered to the DOE. 2) It is not clear why only these hydro plants that operated after 2000 and with installed capacity of 10- 50 MW are considered in the common practice analysis, project participants is requested to clarify it.	B.5.15	1) The common practice analysis is revised. Reference documents will be supplied to DOE. 2) According to the Tool for the Demonstration and Assessment of Additionally, projects are considered "similar" in case they are located in the "same county/region", are of "similar scale", and "take place in a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing, etc". So we have analyzed all hydropower projects in Yunnan Province with installed capacities between 15MW and 50MW that have started operations. The details are shown in step 4 in Section B.5.	☑ The common practice analysis has been revised. See IRL No. 44-IRLNo.88 for common practice analysis.
<u>Corrective Action Request No.9.</u> Please deliver the spreadsheet of calculation of the operating margin and build margin emission factors to the DOE.	B.6.3.3	The spreadsheet of calculation of the operating margin and build margin emission factors will be supplied to DOE.	☑ The spreadsheet of EF calculation has been supplied to DOE.
<u>Corrective Action Request No.10</u> The value provided for estimation is not correct, please revise it.	B.7.1.3	The PDD have been revised, please check the B.7 in PDD for details.	☑ The value has been correctly revised.
<u>Corrective Action Request No.11:</u> Please provide information in detail in the PDD what EGmn,y and PRmn mean.	B.7.2.3	The PDD have been revised, please check the B.7 in PDD for details.	☑ The parameters have been revised according to methodology.

Corrective Action Request No.12: According to the document provided by the project owner, the starting date of construction should be Apr.1, 2006 instead of Mar.6, 2006, please correct it.	C.1.1	Actually, the construction contract was signed on March 14, 2006, it is the earliest starting date of the project. However, the approval from Development and Reform Committee of Honghe Prefecture was issued a little late than expected. As a result, the project supervisory company signed the "Notification for delayed the construction project of Ladenghe Hydropower station". And only after got the approval of the FSR, the project just started to construct.	☑ The starting date of the project activity is determined by the real action of the project activity. See IRL No.108
Corrective Action Request No.13: Please mention in the PDD that no transboundary environmental impacts are involved with the project activity.	D.1.4	Xinqiao River and its branches are not transboundary rivers, so there is no transboundary environmental impact involved with the project activity. It has been added in Section D in PDD.	☑ The information is correct according to the on-site audit and EIA report.

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Annex 2: Information Reference List

Ref. No.	Issuance and/or submission date (dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
1	25/12/2007	PDD "Jinping Ladeng River Hydropower Station", Version 2.0	Beijing Tianqing Power International CDM Consulting Co., Ltd	PDD for GSP
2	30/11/2007	Approved consolidated baseline and monitoring methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", ACM0002 – Version 07	UNFCCC	CDM Methodology
3	30/11/2007	Tool for the demonstration and assessment of additionality, Version 05.2	UNFCCC	Additionality Tool
4	05/03/2008	Participant list of on-site interviews	TÜV SÜD	Tool baseline EF
5	05/03/2008	On-site interviews conducted by TÜV SÜD. Validation Team: Mr. Tom Xiong TUV-SUD Shenzhen Mr. Charles Huang TUV-SUD Shenzhen Interviewed Persions: Mr. Zhang Junfong Yunnan Jinping Ladeng River Power Generation Co., Ltd. Mr. Tao Pingshen Yunnan Jinping Ladeng River Power Generation Co., Ltd. Ms.Yang Ming Yunnan Jinping Ladeng River Power Generation Co., Ltd. Mr. Zhao Chenchen Yunnan Jinping Ladeng River Power Generation Co., Ltd. Ms. He Xiaodan Yunnan Jinping Ladeng River Power Generation Co., Ltd. Ms.Wang Xuechun Yunnan Jinping Ladeng River Power Generation Co., Ltd. Ms. Zhen Ling Beijing Tiangqing Power International CDM Consulting Co.,Ltd.. Mr. Zhao Jinlan Beijing Tiangqing Power International CDM Consulting Co.,Ltd. Mr.Dai Juoga Jinping Water Source Bureau. Mr. Liu Yongli Jinping Environmental Protection Bureau	TÜV SÜD	Onsite Audit

Ref. No.	Issuance and/or submission date (dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
		Mr. Tao Xiaohua Jinping Land Management Bureau Mr. Li Youchao Jinping Environmental Protection Bureau. Mr. Chen Jianhua Jinping Water Conservancy Bureau Ms. Chen Yanhua Jinping Environmental Protection Bureau. Mr. Shen Jinhui Jinping Coordination Office Mr. Deng Guiping Jinping Coordination Office.		
6	08/03/2005	Business license	Jinping Industry & Commerce Bureau	
7	02/04/2007	Company Statute	Yunnan Jinping Ladeng River Power Generation Co., Ltd.	
8	November 2005	Feasibility Study Report "Yunnan Xinqiaohe Ladeng River station"	Sinohydro 14th Bureau	IRR input data source
9	18/05/2006	Approval of Feasibility Study Report "Yunnan Xinqiaohe Ladeng River station"	Development and Reform Commission of Honghe Hani-Yi Autonomous Prefecture	
10	January, 2006	Financial Analysis Report	Sinohydro 14th Bureau	IRR input data source
11	February, 2006.	EIA" Yunnan Xinqiaohe Ladeng River station"	Environmental Science Institute of Honghe Prefecture	
12	March, 2006	Water & Soil Conservation Program	The Water Conservancy Investigation Team of Jinping Miao, Yao and Dai Race Automotous County	
13	23/06/2006	Approval of Water & Soil Conservation Program	Water Conservancy	

Ref. No.	Issuance and/or submission date (dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
			Bureau of Honghe Hani-Yi Autonomous Prefecture	
14	25/05/2005	Pre-review of Land Usage	Land Management Bureau of Honghe Hani-Yi Autonomous Prefecture	
15	20/07/2006	Approval of Forest Land	Forest Department of Yunnan Province	
16	22/08/2006	Loan Contract	Kaiyuan prefecture branch of China Bank	
17	20/01/2006	Meeting of the Board of Directors	Yunnan Jinping Ladeng River Hydro-Electric Co., Ltd.	Timeline: early CDM consideration
18	25/02/2006	Support Confirmation Letter	DRC of Jinping County	Timeline: early CDM consideration
19	01/04/2006	Permission for Starting Construction	Jinbo Construciotn Supervisory Company of Yunnan Province	Timeline: defining the starting date of the project activity.
20	28/01/2007	Agreement on Compensation for Land Expropriation	Hydropower Development Coordination Office of Jingping County Yunnan Jinping Ladeng River Hydro-Electric Co., Ltd.	

Ref. No.	Issuance and/or submission date (dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
21	29/05/2003	Compensation Standard, Jin Zhe Fa [2003] 55	The Government of Jinping Miao, Yao and Dai Race Automotous County	
22	14/03/2006	Power Plant Construction Contract	Yunnan Jinping Ladeng River Hydro-Electric Co., Ltd. Sinohydro Bureau 14	Timeline: starting date of the project activity
23	15/06/2006	Purchase contracts of turbines and generators	Deyang Dongneng Machinery Engineering Technologies Co., Ltd Yunnan Jinping Ladeng River Hydro-Electric Co., Ltd.	Timeline: main equipment purchasing contracts.
24	20/10/2006	Transformer Purchase Contract	Yunnan Jinping Ladeng River Hydro-Electric Co., Ltd Yunnan Standard Transformer Co., Ltd	Timeline: main equipment purchasing contract.
25	2007 - 2008	Electricity Purchase and Sales Contract 2007 and 2008	Yunnan Jinping Ladeng River Hydro-Electric Co., Ltd. Grid Company	Agreement with the local grid company
26	25/07/2007	Honghe Daily	Media Group of Honghe	Stakeholder consultant

Ref. No.	Issuance and/or submission date (dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
27		Stakeholders' Questionnaires		
28	15/04/2002	General Office of the State Council, Notice on Strictly Prohibiting the Construction of Fuel-fired Power Plants with Installed Capacity of 135MW or below	National Council of PRC	Identification of the alternatives to the project and consistency with applicable laws and regulations
29	2005	The Guideline for Credit Policy of Bank in 2005		
30	2008	IRR calculation sheet	Beijing Tiangqing Power International CDM Consulting Co.,Ltd.	IRR calculation spreadsheets with/without the benefits deriving from the CDM
31	10/10/2002	The Management Provisional Regulation on the Construction of Small Fuel-fired Generators	National Council of PRC	
32	1995	Economic Evaluation Code for Small Hydropower Projects, Document No. SL16-95	the Ministry of Water Resources	Design code and benchmark reference.
33	2003 to 2007	China Energy Statistical Yearbook(2002/2003/2004/2005/2006)	Department of Industry and Transport Statistics, National Bureau of Statistics of P.R. China, and Energy Bureau of National Development and Reform Commission of P.R. China	Baseline information (calculation of baseline emissions)
34	2003 to 2008	China Electric Power Yearbook(2002/2003/2004/2005/2006/2007)	China Electric Power Press	Baseline information (calculation of baseline emissions)

Ref. No.	Issuance and/or submission date (dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
35	January, 2008	China LoA	China DNA	LoA
36	2008	Electricity sales invoices: 27/05/2008 - 30/06/2008 - 26/12/2008	Grid Company	Cross-check for grid tariff applied
37	15/03/2008	submerged area and GPS coordinates	Sinohydro Bureau 14	Footnote 1
38		Electricity Industry Index-Thermal power generations in 2006	Electrical Development	Footnote 3
39	20/03/2007	The cost analysis of new renewable energy & application	NRDC	Footnote 9
40		The investment in Biomass Power plants	Website of World New Energy	Footnote 10
41	17/02/2006	The distribution of wind power in China	Website of World New Energy	Footnote 11
42		Searching System for Water Conservancy and hydropower Technique Standard	Water Conservancy Design Institute	Footnote 15
43	24/01/2006	CER price	Point Carbon	Footnote 13
44	November, 2005	FSR of Sitaishan Power PlantProject	Sinohydro Bureau 14	Footnote 80
45	25/09/2007	Approval of Wayao River Power Plant	DRC of Honghe Hani-Yi Autonomous Prefecture	Footnote 80
46	June, 2006	FSR of Wayao River Power Plant	Yunnan Agriculture and Electricity Design & Research Institute	Footnote 80
47	December, 2003	FSR of Maguo River Power Plant	Sinohydro Bureau 14	Footnote 80
48	21/01/2009	Financial Audit Report	Yunnan Yongsheng C.P.A Partnership	Footnote 23, Cross-check for total investment

Ref. No.	Issuance and/or submission date (dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
49	08/12/2008	The preparation of Hydro power station business plan	Hualing Sifang Company	Footnote 24, Cross-check for average unit investment & annual O& M cost
50	2006	Yearbook of China Water Resource	China Water Conservancy & Hydropower Co., Ltd	Common Practice analysis
51	2008	Water Resource Distribution	Website of China Hydropower Engineering Consulting Group Co.	Common Practice Analysis
52	2008	Water Resource Investigation in Guangxi Province	Website of China Hydro Resource	Common Practice Analysis
53	2008	Water Resource Investigation in Yunnan Province	Website of China Hydro Resource	Common Practice Analysis
54	2008	Water Resource Investigation in Guizhou Province	Website of China Hydro Resource	Common Practice Analysis
55	28/02/2001	The law for Autonomous Region of P. R. C	National Council of China	Common Practice Analysis
56	2005	Almanac of China Water Power		Common Practice Analysis
57		The information of Luoze River	www.sp.com.cn	Common Practice Analysis
58	13/04/2007	PDD of Yunnan Haier 25 MW Hydro Power Station	UNFCCC	Common Practice Analysis
59		Introduction of Yisha River Power Plant	Website of Water	Common Practice

Ref. No.	Issuance and/or submission date (dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
			Conservancy & Power Construction Group. Co	Analysis
60		Introduction of Laohushan Phase 2 Power Plant	Website of Yunnan Province Government	Common Practice Analysis
61	03/04/2007	The construction check-up of Hongshiyan Power Plant	Website of Yunnan Province Government	Common Practice Analysis
62	15/03/2004	Introduction of Jiren Power Plant	www.zhongguook.com	Common Practice Analysis
63	07/12/2004	Introduction of Nanting Power Plant	www.cninfo.com.cn/final page	Common Practice Analysis
64	28/12/2005	Yunnan Wenshan Electricity Stakeholder Changes	http://business.sohu.com/20051228/n241172999.shtml	Common Practice Analysis
65	10/02/2002	The notice of Issuing Electricity Industry Reform Plan	National Council	Common Practice Analysis
66		The introduction of the hydrostations of Xima Xingyun Company	www.und.cn	Common Practice Analysis
67		Introduction of Chongjianghe Power Station	http://www.gdxds.com.cn/Colligate.asp?classid=17	Common Practice Analysis
68		Introduction of Wenshan Company	http://www.wsdl.com.cn/introduce/	Common Practice Analysis
69		Introduction of Baoshan Electricity Co.	http://www.nut168.com/	Common Practice

Ref. No.	Issuance and/or submission date (dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
			mrmq/mq/1559.html	Analysis
70		Introduction of Baoshan Supa River Hydropower Development Co., Ltd	Website of Baoshan Supa River Hydropower Development Co., Ltd	Common Practice Analysis
71		Introduction of Houqiao Power Plant	http://www.khidi.com:8083/ShowMess.asp?ArticleID=934	Common Practice Analysis
72		Introduction of Kunming Hydroelectric Investigation , Design and Research Institute	http://www.khidi.com:8083/BMWeb/kmyjj/qygs.asp	Common Practice Analysis
73		Introduction to Yunnan Machinery Import & Export Co., Ltd.	http://www.ymc.com.cn/EN/about.htm	Common Practice Analysis
74	07/05/2003	Introduction of Yanziya Power Plant	http://www.yn.xinhuanet.com/ynnews/2003-05/07/content_469089.htm	Common Practice Analysis
75		Introduction of the investor of Yanziya Power Plant	Website of Dali Electric Power Supply Bureau	Common Practice Analysis
76		Introduction of the investor of Yanziya Power Plant	http://www.smeyndl.gov.cn/readnews.asp?newsid=1798	Common Practice Analysis

Ref. No.	Issuance and/or submission date (dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
77		Introduction of the support towards Supa Wuni River Power Plant	http://www.leica-geosystems.com.cn/newsdetail.asp?l3=0&nid=469	Common Practice Analysis
78		Introduction of the support towards Houqiao Power Plant	Website of Baoshan City Government	Common Practice Analysis
79	08/10/2008	Introduction of Laodukou Power Plant	http://www.chinapower.com.cn/article/1096/art1096480.asp	Common Practice Analysis
80	August, 2002	FSR of Xiashilong Power Plant	The hydro power Investigation Institute of Wenshan Prefeture	Common Practice Analysis
81	09/10/2004	Introduction of the investment and annual operation hours	http://www.bhi.com.cn/	Common Practice Analysis
82		Introduction of Wunihe Station	Website of Baoshan Supa River Hydropower Development Co., Ltd	Common Practice Analysis
83		The Introduction of tariff of Maomaotiao Power Plant	http://www.788111.com/f10/600995/f10_newscontent/2/174050602171.html	Common Practice Analysis

Ref. No.	Issuance and/or submission date (dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
84	24/01/2007	The introduction of tariff of Yanziya Power Plant	Website of Commerce Bureau of Yunnan Province	Common Practice Analysis
85		The introduction of operation of Wuni River Power Plant(tariff)	http://www.ynpower.com.cn/information/510.svc	Common Practice Analysis
86	14/02/2007	The introduction of operation of Laodukou Power Plant(tariff)	http://www.topcj.com/html/2/KPGG/20070214/45241.shtml	Common Practice Analysis
87	16/03/2005	The introduction of Maomaotiao Power Plant (investment)	http://www.ynws.gov.cn/docdetail_new.asp?id1=20050321081428	Common Practice Analysis
88	July, 2003	FSR of Mengdian River	Yunnan Water Conservancy and Hydro Power Investigation & Design Institute	Common Practice Analysis
89	12/08/2006	Agreement of Commission Management	Yunnan Jinping Ladeng River	Cross-check for IRR input values
90	21/01/2009	Financial Audit Report	Yunnan Yongsheng C.P.A Partnership	Cross-check for IRR input values
91	16/09/2007	Qualification of Yunnan Yongsheng C.P.A	Ministry of Finance of P.R.C	
92		Fixed Asset Insurance	PICC Property and	Cross-check for costs

Ref. No.	Issuance and/or submission date (dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
			casualty Company Ltd	
93		Housing Public Fund	The management Center of Housing Public Fund of Honghe Prefecture	Cross-check for O&M costs related parameters
94	31/12/2008	The sheet of electricity Supply to Grid in Year 2008	Yunnan Jinping Ladeng River Power Generation Co., Ltd	Cross-check for electricity supplied to the grid.
95	2008	Salary sheet	The workers of Ladeng River Power Plant	Cross-check for O&M costs related parameters
96	14/11/2008	The water resource fee Standard	Website of Yunnan Province Government	Cross-check for O&M cots related parameters
97	December, 2005	Water Resource Assessment Report of Ladeng River Power Plant	Qujing City Nengyang Water Conservancy and Hydropower Survey and Design Ltd.	Cross-check for annual operation hours
98	25/10/2007	Letter of Intent	Edison Yunnan Jinping Ladeng River Power Generation Co., Ltd	Timeline: steps to the finalization of a CERs purchasing agreement.
99	August, 2006	ENEL statement (i)	ENEL	
100	January, 2006	supplemental Financial Analysis Report	Sinohydro Bureau 14	
101	14/07/2006	Approval of supplemental Financial Appraisal Report	Honghe Prefecture Development and Plan Committee	

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102	18/06/2002	Regulation of development programming of electrical power in the region(SL22-92)	Administration of Water Conservancy	
103	1994	Circular on Several Questions of Value Added Tax Yunshuiliuzi[1994]53	Taxation Bureau of Yunnan Province	Cross-check of applicable VAT
104	1985	Temporary rules on city maintenance and construction tax. Guofa[1985]191	National Council of People's Republic of China	
105	2005	The temporary Regulation on Levying Education Surcharges	National Council of R.P.C	
106	04/04/2007	Cooperation Framework Agreement	Edison Tianqing Power	Timeline: CDM development agreement.
107	December, 2005	Assessment Opinion of FSR	Honghe Prefecture Development and Plan Committee	
108		Notification for delay of construction project	Jinbo Construction Supervisory Company	
109	09/08/2007	Bulletin on Baseline Emission Factor of Chin Grid	Director Office of the National Climate Change Coordination of NDRC	Baseline emission factors
110	15/02/2006	The Letter Supporting Jinping Ladeng River Hydropower Station applying for CDM	Honghe Prefecture	Timeline: starting the CDM application
111	11/03/2006	CDM Cooperation Agreement	Yunnan Jinping Ladeng River Power Generation Co., Ltd	Timeline: CDM application step

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			Beijing Tianqing Power International CDM Consulting Co., Ltd	
112	2008	Updated Valid Technical Standards List for Hydropower http://www.giwp.org.cn/upload/file/2008/20080718095435046554.xls	National Planning and Design Institute of Water Conservancy and Hydropower by Ministry of Water Resources of the People's Republic of China	Applicability and validity of the design codes and of the benchmark source
113	26/05/2008	Emission Reduction Purchase Contract	Yunnan Jinping Ladeng River Power Generation Co., Ltd Edison Spa	Timeline: signature of the final CERs purchasing contract.
114	08/06/2009	PDD "Jinping Ladeng River Hydropower Station", Version 3.0	Beijing Tianqing Power International CDM Consulting Co., Ltd	Revised PDD, based on PDD guidance.
115	20/07/2009	Letter of Approval	Ministero dell'Ambiente e della Tutela del Territorio e del Mare	LoA Italy
116	24/07/2008	PDD Yunnan Nujiang Fugong Guquan River Hydropower Station http://cdm.unfccc.int/UserManagement/FileStorage/O4K1F5IN0Q9X3G7DAWEBSUR8TLMZHV		Common Practice: differences with similar projects in the area
117	01/08/1996	Specification on Energy Economy Design of Water Resources and Hydroelectric Projects	Hydro Electric Power Industry Ministry	Reference standard for the design of the annual average operational hours

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118	28/03/1994	Hydro Energy Design Code for Small Hydro Power Projects (SL-76-94)	The Ministry of Water Resources of China	Reference standard for the design of the annual average operational hours
119	19/09/2002	Regulation for Hydrologic Computation of Water Resources and Hydropower Projects (SL278-2002)	The Ministry of Water Resources of China	Reference standard for the design of the annual average operational hours
120	20/12/2005	FSR Assessment Opinion of Expert Team	Experts from water conservancy bureau,Forestry Bureau,Bureau of Land and Resources,Environmental Protection Agency and Local Government	Geological conditions of project site
121	23/07/2009	PDD "Jinping Ladeng River Hydropower Station", Version 3.1	Beijing Tianqing Power International CDM Consulting Co., Ltd	Final PDD