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Validation Report

Trading Emissions PLC

**VALIDATION OF THE CDM-PROJECT:
YUNNAN SINANJIANG HYDROPOWER PROJECT**

REPORT NO. 1170577

18th February 2010

TÜV SÜD Industrie Service GmbH
Carbon Management Service
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Subject: Validation of a CDM Project	
Accredited TÜV SÜD Unit: TÜV SÜD Industrie Service GmbH Certification Body "climate and energy" Westendstr. 199 80686 Munich Germany	TÜV SÜD Contract Partner: TÜV SÜD Industrie Service GmbH Carbon Management Service Westendstr. 199 80686 Munich Germany
Project Participant: Trading Emissions PLC 54/62 Athol Street Third Floor, Exchange House Douglas Isle of Man UK	Project Site(s): Naha Town, Baliu Town and Sinanjiang Town, Mojiang Hanizu Autonomous County, Simao Region Yunnan Province People's Republic of China Dam: 23°05'44"N and 101°52'41"E Power plant: 101°46'30"E and 23°04'53"N
Project Title: Yunnan Sinanjiang Hydropower Project	
Applied Methodology / Version: ACM0002/ Version 07	Scope(s): 1
First PDD Version: Date of issuance: 26-03-2008 Version No.: 01 Starting Date of GSP 30-04-2008	Final PDD version: Date of issuance: 17-02-2010 Version No.: 05
Estimated Annual Emission Reduction:	696,245 tCO ₂ e
Assessment Team Leader: Dr. Sven Kolmetz	Further Assessment Team Members: Jason Wu 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.	

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:
Yunnan Sinanjiang Hydropower Project.

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
<i>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.</i>	<i>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.</i>	<i>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</i>	<i>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.</i>	<i>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.</i>

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
<i>If the conclusions from table 1 are either a Corrective Action, a Clarification or a Forward action Request, these should be listed in this section.</i>	<i>Reference to the checklist question number in Table 1 where the issue is explained.</i>	<i>The responses given by the client or other project participants during the communications with the validation team should be summarised in this section.</i>	<i>This section should summarise the discussion on and revision to project documentation together with the validation team's responses and final conclusions. The conclusions should be reflected in Table 1, under "Final PDD".</i>

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	Explanation of the Conclusion for Denial
<i>If the final conclusions from table 2 results in a denial the referenced request should be listed in this section.</i>	<i>Identifier of the Request.</i>	<i>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.</i>

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 scope linked to the methodology has to be covered by the assessment team.

Name	Qualification	Coverage of sectoral scope	Coverage of technical area	Host country experience
Dr. Sven Kolmetz	ATL	☑	☑	☑
Jason Wu	GHG-A	☑		☑
Riccardo Arena	GHG-A	☑	☑	

Mr. Jason Wu is a GHG auditor for environmental management systems and CDM at TÜV SÜD China. He is based in Guangzhou. He has received training in the CDM validation process and participated already in several CDM project assessments.

Mr. Riccardo Arena is 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 March 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 14 May 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. Hongfei Ruan	Statistic Specialist, Yunnan Dianneng Sinanjiang Hydropower Development Co., Ltd.
Mr. Jianguo Liang	Planning & Contracting Officer, Yunnan Dianneng Sinanjiang Hydropower Development Co., Ltd.
Mr. Hengzhe Cai	Consultant, Coway International TechTrans Co., Ltd.

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 PDD submitted requesting registration was version 04, dated July 2009 serves as the basis for the final assessment presented. After the submission for registration, a request for review was noti-

fied on December 14th, 2009; the response has been considered at EB52 and the Board accepted to register the project activity subject to corrections herewith included (EB52 report - § 44 (ag)). Accordingly, the PDD was revised to its final version 05, dated 17/02/2010. . 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 Dianneng Sinanjiang Hydropower Development Co., Ltd. of The People's Republic of China and Trading Emissions PLC of The United Kingdom of Great Britain and Northern Ireland. The host Party China and further participant Parties United Kingdom of Great Britain and Northern Ireland meet the requirements to participate in the CDM.

The DNA of the United Kingdom has issued a LoA (IRL 52) on 03 August 2009 authorizing Trading Emissions PLC as a project participant. The DNA of China has also issued a LoA (IRL 29) on 18 January 2008 authorizing Yunnan Dianneng Sinanjiang Hydropower Development 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 "Yunnan Sinanjiang Hydropower Project".

Both letters also indicate that each participating Party is a Party to the Kyoto Protocol, and that the participation in the Yunnan Sinanjiang Hydropower Project 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 Department for the Environment, Food and Rural Affairs, respectively.

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

The LoA of China does not refer to a specific version of the PDD or validation report; the LoA of UK DNA refers to PDD version 04 dated 25 July 2009 and to the draft Validation Report dated 16 June 2009. 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 proposed project activity consists of a 201MW hydropower plant. In particular three turbines will be marched with three 67MW generators with an expected annual operation time of 4,575 hours, producing 825.6 GWh. The project will connect to the regional Yunnan Grid and through it will reach the Southern China Grid.

The project will contribute to the sustainable development of the area, substituting the relevant amount of electricity coal – based production with clean hydropower electricity, reducing the annual GHG emissions for an amount of 696,245 tCO₂. 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 if available.
- 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 (if available) 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 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 and geological areas related to the project and by all the other power plants connected to the Southern China Grid. Thus, all the equipments and the involved geological area covered by the regional grid are included: reservoir, dam, turbines, generators, transformer, transmission and distribution systems.

Main emission source included in the baseline project boundary is CO₂ from electricity generation in fossil fuel fired power plants in the Southern China Grid; CH₄ and N₂O 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: CO₂ and N₂O have been excluded for simplification. The CH₄ emissions from the reservoir have also been excluded according to methodology which allows to exclude the power density of the project, which is largely greater than 10 W/m².

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

- Feasibility Study Report (IRL 7);
- The intention letter on Grid Connection (IRL 12);
- Environmental Impact Assessment (IRL 10);

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 Southern China 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 (2003 to 2006) (IRL 39);
- China Energy Statistical Yearbook (2003 to 2006) (IRL 40);

- Notice on Strictly Prohibiting the Construction of Fuel-fired Power Plants with Installed Capacity of 135MW or below (IRL 42);
- Baseline Emission Factors for Regional Grids in China, renewed by the Director Office of the National Climate Change Coordination of NDRC (IRL 32).

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 verifiable 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 quoted 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 (IRL 32). 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). 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 a 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 have been set according to the project specifications (IRL 7). 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 (IRL 42);
- Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects (IRL 43);
- Yearbook of the China Water Resources 2006 and 2007 (IRL 41).

On site the additionality has been discussed principally with: Mr. Jianguo Liang, Planning & Contracting Officer of Yunnan Dianneng Sinanjiang Hydropower Development Co., Ltd.. Further documents have been reviewed on-site (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:

- Website of Yunnan Local Taxation Bureau (IRL 46);
- Website of the Ministry of Foreign affairs in China (IRL 47).

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 when the construction recommenced on 25 October 2005; it should be noted that this date corresponds to the restart of the construction activities which were formally stopped in March 2005. In order to corroborate this information the assessment team has verified that the cessation of the project activity has been adequately supported by credible evidences; in particular the following evidences have been verified in order to confirm that the project implementation ceased:

- Agreements of termination of the contract for the diversion tunnel (IRL 15 and IRL 16), demonstrating that the construction was stopped due to frequent collapse accident and underground water burst;
- Notice to stop the construction (IRL 17), indicating that the board of directors of Yunnan Dianneng Sinanjiang Hydropower Development Co., Ltd., based on the above, to stop the construction.

In particular, the DOE has performed an assessment in order to clarify on which basis the capital costs incurred prior to the recommencement of the project construction have been taken into account (i.e. subtracted) in determining the Static Total Investment adopted in PDD – Investment Analysis. Essential condition to perform a proper analysis in this context has been to determine, in consistency with CDM Glossary of terms, the starting date of the project activity which, according to the project implementation history needs to be defined as a re-start of the activities following project cessation. Details regarding how these information has been validated is presented hereafter.

Validation of project cessation and re-commencement as per CDM Glossary of Terms (p28):

It could be confirmed through relevant termination agreements (see below) that project construction activity mainly stopped on November 2004 (suspension of water tunnel construction), and later is entirely ceased after April 2005 (suspension of dam construction) due to unanticipated weak geological structure. The financial commitments made by April 2005 were audited by registered accountant. The project recommenced later in October 2005.

The DOE has checked several evidences in order to confirm the above and in particular that the project was subject to an effective cessation, as explained by PPs. In particular, to validate how the

financial commitments were cancelled in accordance to the CDM Glossary of Terms (p28) the following documents were considered by TÜV SÜD:

Date	Document	Description
25/10/2004	Termination agreement of the construction contracts for water tunnel Section 3 (IRL 15)	This agreement details the cancellation of the construction contract 6th Engineering Company of Gezhouba Group for water tunnel Section 3
13/11/2004	Termination agreement of the construction contracts water tunnel Section 2 (IRL 16)	This agreement details the cancellation of the construction contract 8th Engineering Company of Sino Hydro Corporation for water tunnel Section 2
26/03/2005	Board of Directors' meeting minutes (IRL 17)	The Board of Directors Meeting Minutes decides to cease all construction activities for the project
20/04/2005	Termination of the dam construction contract	This agreement with the Fourteenth Engineering Company of Sino Hydro Corporation cancelled the dam construction activities, due to the ceased construction and undetermined loan.
13/9/2005	Financial Capital Stock-taking Report by the Kunming Hydropower Investigation, Design and Research Institute (IRL 48)	The "Context Section" of this report states that "After considering the facts including practical construction difficulty, budget and external financial environment, Sinanjiang Hydropower Development Company decided to stop all the construction activities and related supporting activities on 20 March 2005 [sic]."
20/10/2005	China Construction Bank (CCB) loan contract to restart the Project Activity (IRL 22)	The covering letter for the new loan agreement from the CCB supports the Board of Directors decision to restart the Project Activity with the support of the CDM and agrees to provide loan.

It should be noted that before the restart of the project under the CDM in October 2005, no contractor was appointed for the power house. Accordingly the DOE has verified that related contract¹ was signed only on November 2005. The above mentioned documents have been checked on site by the local auditor; it's confirmed that the same (in particular the cancellation contracts, IRL 15, 16) are deemed appropriate in order to confirm the cessation of project activity in April 2005 as per CDM Glossary of Terms and its later recommencement as a CDM project, officially evidenced by a third party document as the China Construction Bank (IRL 22).

Validation of the financial commitments made at the time of project suspension and consideration of the same as per EB 41, Annex 45, section 7

The DOE confirms that the Project Entity was aware of the different financial options available before the recommencement of the project under the framework of the CDM in October 2005. The Financial Capital Stock-taking Report² (Investment Capital Adjusting Report IRL 48) by a third party design institute reported on the project's financial situation in September 2005. This report indicated

¹ Sinanjiang Hydropower Station Main and Accessorial Powerhouse, Transformer station Construction and Electrical Equipment and installation Contract - Contract code: SNJ/C6 between Yunnan Dianneng Sinanjiang Hydropower Development Co., Ltd. and The 3rd Construction Company of Sino-Hydro Corporation

that a total RMB 230.2393 million had been committed by the Project Entity by August 2005. In addition, the report includes details of the progress of construction from which it can be deduced that a large portion of costs incurred were recoverable.²

In order to further meet the requirements of EB 41 Annex 45 section 7, the Project Participants (PP) appointed a registered accountant, Pingzheng Assets Appraisal, to independently audit the capital expense incurred and estimate the recoverable value of fixed assets before cessation of the project. Pingzheng conducted an on-site investigation, market research and financial assessment to complete the Assets Evaluation Report (IRL 50) of Sinanjiang Hydropower Project issued on October 2008. This report explains in detail the financial commitments made by April 2005 and presents an assessment of their recoverable value. The original investment cost before cessation was estimated by Pingzheng as RMB 225.4547 million. The recoverable value of the invested capital cost was estimated in the Pingzheng report as RMB 134.6127 million (i.e. 59.7% of the committed costs were deemed recoverable).

Project Construction (Recoverable cost)	prophase project	main project	Electrical system project
134.6127	65.5053	63.4187	5.689

Notes: It has been clarified that prophase project mainly consists of road, river diversion structure; main project consists of Dam, water tunnel and equipment purchase.

In line with EB 41, Annex 45 only these recoverable costs were considered for the financial analysis in the PDD.

In addition, cross-checking with the official final accounts of the completed Project Activity (IRL 53 in VR), the DOE could confirm that the actual investment in fixed assets has reached RMB 1,558.3206 million. It should be noted that even if all the recoverable value of the investments undertaken before cessation of the project as estimated in Assets Evaluation Report (IRL 50 in VR) is subtracted from the actual cost of the project, the resulting figure of RMB 1,332.8659 million is still substantially higher than that used in the PDD. Therefore it's confirmed that the total investment of RMB 1,306.25 million adopted in this PDD was estimated conservatively.

According to the above presented assessment, which finds its basis on third party documents such as the Kunming Investigation and Research Institute, the Kunming Pingzheng Assets Appraisal Consultancy and the Kunming Huaxing Huakun Accounting Firm, the DOE confirms that assumptions made in PDD have been adequately substantiated and result in line with requirements stated in EB 41 Annex 45 section 7.

Furthermore, the assessment team verified this information with the planning and construction officer of Yunnan Dianneng Sinanjiang Hydropower Development Co., Ltd.: according to Mr. Jianguo Liang, it's confirmed that the construction was formally stopped on 26 March 2005 as evidenced (IRL 17) and that it recommenced on end of October 2005. It has been clarified that at the time when the construction was stopped, an amount corresponding to 16.14% of the forecasted investment was spent. In addition, according to the Design Modification Report (IRL 18) issued in September 2005, the total investment was found to increase of about 4.8% if compared with the expected investment, It's therefore confirmed that the starting date of the project activity has been defined in compliance with the Glossary of CDM Terms; in particular, the starting date of the project activity is determined to be 25 October 2005, which is before 02 August 2008, as well as prior to the GSP. The PPs presented the following information to the assessment team to demonstrate the prior consideration of the CDM:

² In the report non-recoverable items amount to RMB 93.34 million (i.e. 40.5% of the total committed)

- The Minute of the Board Decision for CDM date 23rd September 2005 (IRL 19), indicating the decision to proceed with the CDM according to the information which was available at the time in terms of investment conditions and financial viability;
- CDM Consultancy Agreement, dated 12th October 2005 (IRL 25), confirming that the project participants started to take real action in order to pursue the CDM application;
- Letter from the Chinese Construction Bank (IRL 22) dated 20th October 2005 indicating that, following the decision of the project owner to apply the project for CDM, a loan could be granted by the bank. The same has been considered by the DOE as a further confirmation that at the time, the project owner had to seriously decide for the CDM in order to proceed with the project implementation and financing.

The original documents presented have been reviewed and verified based on interviews with Mr. Mr. Jianguo Liang, Officer of Yunnan Dianneng Sinanjiang Hydropower Development 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
September 2005 Directorate decision for the CDM	Minute of the Directorate decision for CDM (IRL 19)	The decision to apply for the CDM status comes after the issuance by a consulting company of a previous proposal to develop the project as a CDM (IRL 49) based on the new feasibility study (IRL 49).
October 2005 Contract with a CDM consultant in order to start the CDM application.	Cooperation Contract with Coway International (IRL 25)	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.
March 2006 Completion of the Project Idea Note	PIN (IRL 44)	The document describe the project and demonstrate that at the time a draft of the CDM project was in the hands of the project owner.
July 2006 Signature of a non-disclosure agreement between the project owner and the buyer.	Non disclosure agreement for CERS purchasing (IRL 26).	The confidentiality agreement is 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 with the buyer.
March 2007 A preparatory emission reductions purchase contract was signed between the project owner and the buyer.	Term sheet for Sinanjiang project (IRL 27).	The document has been checked by the auditor on-site.

November 2007 The ERPA was signed	ERPA (IRL 28)	The document has been checked in its original version; further interviews with Mr. Hengzhe Cai of Coway confirms that this is the official and final agreement between the two parties
April 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.

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 revision of the sources presented in the PDD, inter alia: the Feasibility Study Report (IRL 7) (Installed capacity, net electricity output, project lifetime, annual O&M costs, grid tariff), the Assets Evaluation Report (IRL 50) (re-evaluated investment including the recoverable value of the initial capital expenditure), the Interim Rules on Economic Assessment of Electrical Engineering Retrofit Project (IRL 43), the same that were confirm verbally on-site. Furthermore, the period of time between the finalization of the Investment Capital Adjusting Report (IRL 48), which indicate an Investment higher and the investment decision is only few days, therefore it can be confirmed that it is unlikely that the input values have significantly changed.

Additionally, confirmation of the used parameters has been obtained by crosschecking with the following documents:

- Approval of the FSR (IRL 8), confirming the net electricity output as mentioned in the FSR;
- The Assets Evaluation Report (IRL 50), indicating the conservativeness of the Total Investment as mentioned in the FSR and providing a detailed analysis undertaken by chartered specialists reflecting the capital costs incurred prior to the revised project activity as the recoverable value of fixed assets. The DOE confirms that this approach is in compliance with section 7 of the latest "Guidance on the Assessment of the Investment Analysis" (EB 41 – annex 45);
- The summary of the financial parameters (IRL 53) indicating an actual total investment undertaken which is about 16% higher than the expected one; it should be noted that, at the time of writing this Validation Report a financial audit carried out by an independent accounting institute (Kunming Huaxing Huakun Accounting Firm) is still on-going;

- The Interim Regulation of Hydropower Construction Project Financial Evaluation (IRL 43), recognized reference for other O&M costs related parameters such as the costs of materials and maintenance cost of reservoir;
- Methods and Parameters for Economical Assessment of construction projects (IRL 45), confirming costs of repair, material equipment maintenance and other costs;
- The Notice on grid tariff (IRL 31) and the Power Purchase Contract (IRL 30), indicating a slightly lower price of 0.215 YuanRMB/kWh comparing to the one used in the investment analysis as taken from the FSR of 0.2208 YuanRMB/kWh (both VAT included);
- Power sales invoices (IRL 54) demonstrating that the actual power tariff is slightly lower than the one used in PDD as taken from FSR.

On the basis of its local and sectoral expertise TÜV SÜD was able to confirm that the input values based on the FSR are valid and applicable at the time of the investment decision. In particular the following four key parameters were analysed in more detail due to their potential to have a substantial impact on the financial attractiveness of the project: a) Investment in Fixed Assets; b) Annual O&M cost; c) Tariff Price; d) Electricity Output.

- With regards to a) Investment in fixed assets: this input value has been crosschecked with the investment cost of 9 registered CDM projects³ above 50 MW capacity in Yunnan province (hereafter as “9 similar projects”) and the validation team have found that the range of unit investment cost of these similar CDM projects is about 4,900~10,100 RMB/kW, with an average value of about 6,500 RMB/kW. The unit cost investment cost used for the Project Activity is about 6499 RMB/kW which is well within the range of these 9 similar projects. This input value was further cross-checked with financial audit carried out by a designated independent accounting institute⁴ which showed the input value from the PDD and FSR to be conservative. In addition, TÜV SÜD local expertise was able to confirm that the Local price index of investment in fixed assets (Yunnan, 1997-2007)⁵ indicate a rising trend in prices and within a limited variation range (coefficients of variation are less than 10%).
- Regarding b) Annual O&M costs: TÜV SÜD’s local and sectoral expertise was able to confirm that this parameter has been based on recognized assumptions for its main components such as salary and welfare costs, material, maintenance and reservoir costs leading to an O&M cost which is about 2.15% of the total investment during the first ten years of operation. TÜV SÜD confirms that a similar ratio is reasonable and even conservative in the context of Chinese large scale hydropower plants. To check validity of adjusted O&M cost, the validation team reviewed it with other 9 similar projects in Yunnan province. In particular, O&M cost per installed capacity (Yuan RMB/kW) for these projects ranges between approximately 104~624 YuanRMB/kW, resulting in an average value of 208 YuanRMB/kW. The proposed project activity presents a O&M cost per installed capacity of only 140 YuanRMB/kW. If compared in terms of O&M costs per total investment, the proposed project is below the average of these 9 similar projects presenting a value of 2,16% compared to 3,18%. This confirms that the assumptions made in Feasibility Study Report (IRL 7) lead to plausible and valid figure for this parameter.

⁶ Project activities No. 2133, 2052, 2010, 2151, 2086, 2037, 1570, 1451, 0841.

⁷ This official audit for the project by Kunming Huaxing Huakun Accounting Firm will be used for internal shareholder reporting and will be submitted to the Provincial tax authorities. It is therefore considered reliable.

⁸ National Bureau of Statistic of China, <http://www.stats.gov.cn/tjsj/> Price Index of Investment in Fixed Assets

- c) Tariff price: It was noted by TÜV SÜD that the PDD adopted a conservative approach of applying the tariff from the FSR 0.2208 YuanRMB/kWh while the actual tariff for the project in the project's Power Purchase Agreement is set as 0.215 YuanRMB/kWh. In addition, TÜV SÜD's local and sectoral expertise was able to confirm that this tariff is in line with the Yunnan tariff regulation by the Yunnan Development and Reform Commission (2006) in which a benchmark tariff of 0.215 YuanRMB/kWh is referred to. Furthermore, the used tariff is also in line with the tariff issued in case of 9 similar projects, which has been found on average 0.2182 YuanRMB/kWh.
- d) Electricity Output: TÜV SÜD was able to determine that this figure from the FSR, primarily determined by the river flow rate, is unlikely to vary by much. The hydraulic record (Sinanjiang River, 1956-2000)⁶ of the river where the Project Activity lies shows an annual flow rate of 43.2 m³/s and limited short-term variation. As the river flow rate would have to consistently increase by over 19% for the project to reach the benchmark, TÜV SÜD's sectoral expertise that a similar event is highly unlikely to occur. .

On the basis of its specific local and sectoral expertise TÜV SÜD can therefore provide the validation opinion that the input values applied to the IRR calculation are valid and applicable.

It should be noted that the results in terms of plant load factor and, then, in terms of net power delivered to the grid have been defined ex ante by a third party institute (according to IRL 7) and have been provided to the government while applying for project implementation approval. The DOE accordingly consider as duly satisfied the requirement as stated in EB 48 Annex 11 under section 3(a).

The benchmark used for the financial comparison has been obtained from the Interim Rules on Economic Assessment of Electrical Engineering Retrofit Project (IRL 43). This value has been confirmed against the source, and the suitability for this project can be confirmed due to the project specifications as assessed and verified on site. This proves that the benchmark used is adequate for this project.

Further assumptions presented in the financial analysis inter alia lifetime and taxes have also been reviewed and were found to be appropriate based on the FSR (IRL 7) and the local expertise of the DOE. This confirms that the underlying assumptions are appropriate for this project.

The sensitivity analysis was checked (IRL 37) in detail and we herewith confirm that the underlying assumptions, parameters and chosen values are appropriate and that the calculations have been performed correctly. The analysis includes +/- 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 7) and that 10% variations are commonly applied and deemed reasonable to represent the maximum variations of these parameters in the Chinese context. In conclusion, the sensitivity analysis shows that a reasonable variation in key parameters does not lead to an IRR above the benchmark threshold.

The financial calculations have been verified and no mistakes have been found. According to the EB41, annex 45, section 9, the cost of financing expenditures (i.e. loan repayments and interest) should not be included in the calculation of project IRR. The inclusion of the cost of financing as an expense in this calculation would result in a double counting of this cost in the ultimate analysis. TÜV SÜD confirms that this guidance was observed by the PP. A throughout assessment of the IRR calculation spreadsheet allow to confirm that the value of the investment and O&M costs do not in-

⁶ The Sinanjiang river shows an annual flow rate of 43.2 m³/s and short-term variation coefficient not exceeding 19%. Hydraulic volume, FSR, Kunming investigation and design institute.

clude loan repayment or interests. Following the response to request for review received, two special columns with formula have been added by PPs in Sheet “IRR” and Sheet “Tariff + Revenue” making the spreadsheets more readable. The DOE confirms that financial calculation spreadsheet with formula are readable and all relevant cells are viewable and unprotected, which meets the requirement of EB41, annex 45, section 8. 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 the Yunnan Province. The project activity’s technology can be found in different country regions, where different situations can appear. As a result, the region is defined by taking into account similar technologies as well as similar industry types.

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. The correctness of the selected region for the common practice comes from the nature of the Province in terms of investment conditions and water resources development. In particular the validation team have examined the Yearbook of China Water Resources 2006 (information on different investment, IRL 41) and the websites of Chinese industries operating in the hydropower sector (different development of water resources, IRL 51).

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

Main differences include the annual operating time, which for the proposed project is substantially lower compared to the respective operational time of these four similar projects and the investment yield for those project has been confirmed to be much lower than the one undertaken by the proposed project. These information has been crosschecked with the following publicly available information sources:

- Website of the Yunnan Provincial Western Region Development Office (IRL 55);
- Website of the Huaan Engineering Technology Group (IRL 56);
- Website of the Yangtze River conservation of water and soil bureau (IRL 57);
- Website of the information network “Fendianzhang” (IRL 58);
- Website of the Yinjiang County Government (IRL 59).

In particular, [Referring to VVM §117] the DOE validated the common practice to complement the investment analysis so to confirm that the Project Activity is not widely observed and commonly carried out in the region. In order to do this the DOE undertook the following steps:⁷

1. *Assessment whether the geographical scope of the common practice is appropriate [VVM §118 (a)]*

⁷ Reference was also made to the Additionality Tool which states other projects are considered similar if they are in the same country/region and/or rely on a broadly similar technology, are of a similar scale, and take place in a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing etc..

The first step undertaken by the DOE was the assessment of the geographical scope of the common practice. Yunnan Province, with an area of 394,000 km² is considerably larger than many countries. As verified through third party sources as the UN ESCAP, the DOE confirms that access to finance and technology is a challenge in Yunnan as it is one of the poorest provinces in China.⁸ Furthermore, due to the scale of its provinces and location-specific challenges it is China's central government policy that regional governments propose their own investment incentives and to specify the sectors and industries where investments are encouraged;⁹ Consequently, it can be concluded that Yunnan province has its own set of policies including in the areas of environmental regulatory policy and investment climate as further demonstrated by checking independent sources such as the website of "The Regional Environmental Forum"¹⁰ and the Official website of the Yunnan Province Government.¹¹

In addition, it should be noted that, according to the Shanxi Economic Information Institute¹², within the region covered by the China Southern Power Grid (CSPG), Yunnan province comprises around 70% of the hydro resource available to the geographical boundary covered by the CSPG and that although the provincial grids in the CSPG are interconnected, each provincial grid is individually managed by its respective provincial power grid company.¹³ Furthermore, the local expertise in the sector allows the DOE to confirm that Yunnan Development and Reform Commission sets its own tariff policies which means that the incentives for hydro power developments in other provinces will differ.

Therefore Yunnan was confirmed as the only relevant geographic boundary for the common practice analysis.

2. Using official sources and local and industry expertise to determine to what extent similar operational projects have been undertaken in the defined region [VVM §118 (b)]

At the beginning of 2002 wholesale electricity industry reforms took place in China.¹⁴ Hydropower with an installed capacity of 50-300MW is classified medium-size scale and is subject to specific national standards.¹⁵ Therefore similar operational projects were identified as built since 2002 and with an installed capacity of between 50 and 300MW.

In order to determine to what extent these similar operational projects have been undertaken in reference was made in the first instance to the annual Yearbook of China Water Resources (IRL 41). The DOE confirms this document as appropriate source as the same is the Water Ministry's official reference source listing all Chinese hydropower developments of medium and large capacity.¹⁶ This

⁸ http://www.unescap.org/tid/publication/t&ipub2336_part2vii.pdf: while Yunnan accounts for about 3.4% of the population of China, its share in national GDP is only about 2.2%. Its share of industrial production is considerably lower at 1.8%. Also, its share in national exports and imports (0.4 per cent) as well as foreign investment (0.4 per cent) is much lower compared with its share in the population.

⁹ http://www.unescap.org/tid/publication/t&ipub2336_part2vii.pdf

¹⁰ <http://www.ref-msea.org/yunnan.pdf>

¹¹ Official Website of People's Government of Yunnan Province (Investment section)
<http://www.eng.yn.gov.cn/yunnanEnglish/146092109982597120/index.html>

¹² Shaanxi Economic Information Institute <http://www.sei.gov.cn/ShowArticle.asp?ArticleID=69073>

¹³ "Structure of Organization" CSPG website <http://eng.csg.cn/topic.php?channelID=1&topicID=25>

¹⁴ "Notes on Reform of Power industry" issued by State Department of PRC, 2002; These reforms separated electrical power enterprises into grid operators and those focused specifically on electricity generation.

¹⁵ National standards on Hydro power project classification and security, DL5180-2003

¹⁶ Except hydropower project located in Taiwan, Hong Kong and Macao ("Introduction" section of the yearbook)

reference could therefore be considered to a valid source to identify possible similar operational projects in a comprehensive manner.

This way TÜV SÜD was able to confirm that the following four hydropower projects could be considered as similar operational projects: Gaoqiao, Malutang, Ajiutian, and Dayingjiang.

3. *If similar and operational projects, other than CDM project activities, are already “widely observed and commonly carried out” in the defined region, assess whether there are essential distinctions between the proposed CDM project activity and the other similar activities. [VVM §118 (c)]*

In order to assess whether there were essential distinctions between the CDM project activity and other similar activities further research to complement the information provided in the Yearbook of China Water Resources was conducted by the project participants and validated by TÜV SÜD. The table below, which was presented in consolidated form in the PDD, references in footnotes the source of each individual data input.

Name	Capacity (MW)	Construction (year)	Annual operation time (hour)	Elect. output (10 ⁸ KWh)	Total investment (10 ⁸ RMB)
Gaoqiao	90 ¹⁷	2002 ¹⁸	5000 ¹⁸	4.56 ¹⁷	4.5 ¹⁷
Malutang	100 ¹⁹	2002 ¹⁹	6970 ¹⁹	6.97 ¹⁹	4.47 ²⁰
Ajiutian	105 ²¹	2003 ²¹	5670 ²¹	5.95 ²¹	4.928 ²¹
Dayingjiang	98 ²²	2003 ²²	7153 ²²	7.01 ²²	4.853 ²²

The primary data listed in the table above were used make two ratios which allow comparison of the project activities. The results, listed in the table below, show that the Sinanjiang CDM project is as much as 40% and 54% higher in terms of investment/capacity and investment/electricity output ratios respectively compared to the most similar non-CDM project.

Name	Investment/ Capacity (10 ⁴ RMB/kW)	Investment/ Elect. output (RMB/KWh)
Gaoqiao Hydropower	491	0.99
Malutang Hydropower	447	0.64

¹⁷ Website of Kunming Huaan Engineering & Technology Co.Ltd: www.kmha.cn/Html/yj/sh/34094560.html

¹⁸ Website of the Yunnan Office for Western Development: www.xb.yn.gov.cn/tzjh-b.htm#

¹⁹ Introduction to Malutang Hydropower Dam design , Volume 21, the 5th of Yunnan Hydropower Company

²⁰ Yunnan Water Recouse Department, alternate link: <http://www.wcb.yn.gov.cn/news/1144.html> (the link in the PDD www.cjstbc.com/POParticle/80/1617.Html of China Changjiang Water Resources Commission is invalid now but was validated by DOE and a PDF copy was kept on record by the PPs)

²¹ Website of Yunnan Baoshang Supahe Hydropower Company: <http://www.ynsph.com.cn/column/466.whhtml> (the link www.fengdianzhan.com/data/2007/0310/article_1367.htm news website for renewable energy project is invalid now but validated by DOE and a PDF copy was kept on record by the PPs)

²² Website of Yingjiang Prefecture Commerce Department: www.yjzs.gov.cn/yjzs/Article/xxdt/chxw/200612/150.html

Ajiutian Hydropower	469	0.83
Dayingjiang Hydropower	495	0.69
Sinanjiang Hydropower	695	1.52

These findings show the complementarity of the Common Practice Analysis to the Investment Analysis which confirmed that the project is not financially attractive and would therefore not have occurred without CDM revenue.

The validation report will be revised in order to incorporate the above details in a manner structured to be in line with the reporting requirements outline in VVM §119.

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.

Net electricity delivered to the Power Grid ($EG_{y out}$) is derived as the power supplied to the grid minus the power occasionally received by the project activity from the power grid ($EG_{y in}$); both the parameters are measured through a bi-directional “gateway ammeter” (M1 - accuracy class 0.2S) installed at the inlet of the transformer of Power Grid Company. Furthermore, one “checking ammeter” (M3 – accuracy class 0.2S) will be installed at the outlet of the transformer of the hydropower station, serving as back-up meter. A connection with identical ammeters will be replicated serving as redundant monitoring system (M1' and M3') for back up. In addition, total electricity produced by the project generation, including the electricity supplied to the grid and the electricity supplied to internal loads (TEG_y) will be also monitored through three “Generator ammeters” (M2-1, M2-2 and M2-3) at the outlet of each of the three generators. According to the monitoring plan, the electricity delivered to the grid will be double-checked with the sales invoice/receipt provided by the Project Entity to the Grid Company.

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 a wide distribution of questionnaires. The evidence of these invitations is IRL 33. 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 undertook an environmental impact assessment. The assessment team reviewed the documentation of the presented information. The IRL 7, Environmental Impact Assessment Report 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=4853&Ebene1_ID=26&Ebene2_ID=1487&mode=1	
Starting date of the global stakeholder consultation process: 2008-04-30	
Comment submitted by: None	Issues raised: -
Response by TÜV SÜD: -	

5 VALIDATION OPINION

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

Yunnan Sinanjiang Hydropower Project.

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, 18-02-2010

Munich, 18-02-2010



Certification Body "climate and energy"
TÜV SÜD Industrie Service GmbH



Assessment Team Leader

Validation of the CDM Project:
Yunnan Sinanjiang Hydropower Project



Industrie Service

Annex 1: Validation Protocol

Validation Protocol

Project Title: Yunnan Sinanjiang Hydropower Project

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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 for the document review and the on-site assessment is indicated as version 01 which was completed on 26/03/2008.	☒	☒
A.1.3.	Is this consistent with the time line of the project's history?	1,2	The same version has been published for GSP since Apr. 30 th , 2008 at the DOE's website: www.netinform.net .	☒	☒
A.2. Description of the project activity					
A.2.1.	Is the description delivering a transparent overview of the project activities?	1,2,7	An overview of the project is described transparently in section A.2 of the PPD. The project is located in the territory of Naha Town, Baliu Town and Sinanjiang Town, Mojiang Hanizu Autonomous County, Puer City, Yunnan Province. The total installed capacity is 201 MW, annual electricity output is estimated to be 919.6 GWh and annual electricity delivered to the grid is 826 GWh. The surface area at full reservoir level is 8.168 km². The electricity generated by the project will directly connect to China Southern Power Grid ("CSPG" hereafter) through Yunnan Power Grid. After the project is completed, electricity generated by the project will effectively displace equal amount of the electricity generated by the China Southern Power Grid which is dominated by fossil fuel power plants, and thus greenhouse gas (GHG) emission reductions could be achieved. The estimated annual GHG emission reductions will be 696,607 tCO₂e. <u>Corrective Action Request No.1</u>	CAR1	☒

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			After checking the FSR, the surface area at full reservoir level is 8.168 km ² , not 9.79km ² in the GSP PDD, also the power density calculation should be corrected accordingly.		
A.2.2.	What proofs are available demonstrating that the project description is in compliance with the actual situation or planning?	1,2,7 -11	During the on-site audit numerous proofs for the described assumptions were evidenced. They are summarized in the reference list, Annex 2 to this report. The planning is described in the feasibility study. The following data deliver evidences for the actual situation of the project activity: - Feasibility Study Report - EIA and the approval of EIA - Approval of FSR See CAR1	See CAR1	☒
A.2.3.	Is the information provided by these proofs consistent with the information provided by the PDD?	1,2,7 -11	See CAR1	See CAR1	☒
A.2.4.	Is all information presented consistent with details provided by further chapters of the PDD?	1,2,7 -11	Yes, all information presented is consistent with details provided by further chapters of the PDD. See CAR1	See CAR1	☒
A.3. Project participants					
A.3.1.	Is the form required for the indication of project participants correctly applied?	1,2	Yes, the form is correctly applied.	☒	☒
A.3.2.	Is the participation of the listed entities or Parties confirmed by each one of them?	1,2,2 9	<u>Corrective Action Request No.2.</u> The project name in the LoA issued by China NDRC is different with the PDD in the GSP, please correct this issue in the revised documents. And the MoC and the LoA from the country of the CERs buyer should be provided before the request of project reg-	CAR2	☒

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CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
			istration.		
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	In the table of chapter A.3 and Annex 1 of the PDD, the two parties involved in the project are mentioned: Yunnan Dianneng Sinanjiang Hydropower Development Co., Ltd. and Trading Emissions PLC. <u>Corrective Action Request No.3.</u> The country of the project participant Trading Emissions PLC described in the chapter A.3 of the PDD is Sweden while it is UK described in the Annex 1. Please correct this issue in the revised PDD.	CAR3	☒
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	Sinanjiang hydropower station is located in the territory of Naha Town, Baliu Town and Sinanjiang Town, Mojiang Hanizu Autonomous County, Puer City, Yunnan Province. The dam is located at entry of Tudui Gorge at lower reaches of Jiaolianzhu River, Manniang Village, Baliu Town. The hydropower plant is about 18 km away from Naha Town, 20 km from Sinanjiang Town and 376km from Kunming. It lies at 101°53' east longitude and 23°06' north latitude. <u>Corrective Action Request No.4.</u> The font of the characters in the chapter A.4.1.4 of the PDD is in-compliant to the requirement of the PDD template, which should be changed for the consistency in the revised PDD. Please extend such kind of issue to other chapters of the PDD.	CAR4 CAR5	☒

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		<u>Corrective Action Request No.5.</u> To increase transparency, please clearly indicate the GPS data of both the powerhouse and the dam site. And the value of the longitude and latitude should be specified to seconds.		
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.)?	1,2,7-11	During the on-site audit numerous proofs for the described assumptions were evidenced. They are summarized in the reference list, Annex 2 to this report. The planning is described in the feasibility study. The following data deliver evidences for the actual situation of the project activity: - Feasibility Study Report - EIA and the approval of EIA - Approval of FSR See CAR1	☒	☒
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	The project falls under scope 1 (Energy industries (renewable/non- renewable sources) as it deals with energy generation.	☒	☒
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	The domestically sourced project design is standard hydropower technology and hence reflects the current good practices to use renewable resources to generate electricity.	☒	☒
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. There is no doubt that this technology will reduce the GHG emissions significantly.	☒	

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A.4.3.3. Does the implementation of the project activity require any technology transfer from annex-I countries to the host country(ies)?	1,2,7	There is no technology transfer from annex-I countries to China.	☒	☒
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 is 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?	1,2,7,13	<u>Corrective Action Request No.6.</u> The parameters of the equipments in the PDD are different with the equipments purchasing contract. The reason of the difference should be explained the correction should be made in the revised PDD.	CAR6	☒
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?	1,2,7,13	The common practice for electricity generation is still coal-fired power plant. Hence, the project definitely would result in a better performance than the common practice.	☒	☒
A.4.3.7. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1,2,7,13	It is not expected that there will be a substitution because the turbines, generators and the other equipment will be newly commissioned and installed. The expected 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 to be carried out as scheduled during the project period?	1,2,7,13	<u>Corrective Action Request No.7.</u> Please specify in the revised PDD that if the project require extensive initial training and maintenance efforts in order to be carried out as scheduled during the project period. Also the evidence should be provided to the DOE.	CAR7	☒
A.4.3.9. Is information available on the demand and requirements for training and maintenance?	1,2,7,13	See CAR7	See CAR7	☒

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A.4.3.10. Is a schedule available for the implementation of the project and are there any risks for delays?	1,2	During the onsite audit, it was found that the project construction was started in Nov 2003. After that, the construction of the diversion tunnel engineering bid section SNJ/C3-2 was stopped from Apr 2005, and the construction of the head of pivot bid section SNJ/C2 Material Field was stopped from Jun 2005. The construction stop was caused by the bad geological conditions leading to the cost raised. This raised cost prevented the project from going on because of the shortage of the capital. Since the bank approved the loan application on Oct.20th, 2005, the construction of the project was recommenced. <u>Corrective Action Request No.8.</u> 1. The project schedule including the document of the construction start should be provided to the DOE to verify the compliance to the actual situation and planning. And the time schedule of the project activity should be added in the revised PDD. 2. As it has been seen by "The River Diversion and Closure Engineering Design and Tiding Over The Flood Season Analysis Report" during the onsite audit the project construction was start in Nov 2003, please explain why it takes so long an interval till to start the GSP.	CAR8	☒
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	Yes, the form is correctly applied.	☒	☒
A.4.4.2. Are the figures provided consistent with other data presented in the PDD?	1,2	Yes, the figures provided are consistent with the data listed in chapter A6.2, B6.3 and B6.4	☒	☒
A.4.5. Public funding of the project activity				

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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?	1,2,7,8	According to the statement in chapter A.4.5 of the PDD there is no public funding for the project activity. By reviewing the financial discussion of the FSR, it became evident that no public funds are used by the project.	☒	☒
A.4.5.2. Is all information provided consistent with the details given in remaining chapters of the PDD (in particular annex 2)?	1,2,7,8	Yes, the information on public funding is consistent with the information provided in Annex 2 where is also mentioned that no public funding takes place.	☒	☒
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	The following methodology is used in the project: ACM0002- Consolidated baseline methodology for grid-connected electricity generation from renewable sources (Version 07) <u>Corrective Action Request No.9.</u> - The title of the methodology ACM0002 should not be “Consolidated baseline and monitoring methodology for grid-connected electricity generation from renewable sources”, but be “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”. Please extend such kind of issue to other chapters of the PDD. - The web site address of ACM0002 provided in chapter B.1 of the PDD is invalid, which should be referred to the correct address in the revised PDD.	CAR9	☒
B.1.2. Is the applied version the most recent one and / or is this version still applicable?	1,2	Yes, the version 07 of ACM0002 is the latest version and valid from Dec.14 th , 2007 onwards.	☒	☒
B.1.3. Does the methodology refer to the follow-	1,2	Yes, the following tools with the latest approved version are used in the project:	☒	☒

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ing 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 CO₂ emissions from fossil fuel combustion		-Tool for the demonstration and assessment of additionality (Version 05)" -Tool to calculate the emission factor for an electricity system (Version 01).												
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 applied methodology is considered the most appropriate one.	☒	☒										
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"														
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.	1,2	<table border="1"> <thead> <tr> <th>Applicability checklist</th><th>Yes / No</th></tr> </thead> <tbody> <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> </tbody> </table>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Evidences provided in the PDD?	Yes	Compliance verified?	Yes	☒	☒
Applicability checklist	Yes / No													
Criterion discussed in the PDD?	Yes													
Compliance provable?	Yes													
Evidences provided in the PDD?	Yes													
Compliance verified?	Yes													
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	1,2	<table border="1"> <thead> <tr> <th>Applicability checklist</th><th>Yes / No</th></tr> </thead> <tbody> <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>No</td></tr> <tr> <td>Compliance verified?</td><td>Yes</td></tr> </tbody> </table>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Evidences provided in the PDD?	No	Compliance verified?	Yes	CAR10	☒
Applicability checklist	Yes / No													
Criterion discussed in the PDD?	Yes													
Compliance provable?	Yes													
Evidences provided in the PDD?	No													
Compliance verified?	Yes													

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existing reservoir, where the volume of re- servoir is increased and the power density of the project activity is greater than 4 W/m2 or -The project activity results in new reser- voirs and the power density of the power plant is greater than 4 W/m2.			<u>Corrective Action Request No.10.</u> The calculation formula of the power density of the project activity should be indicated in the chapter B.6.1 of the PDD.													
B.2.4.	Criterion 3 (in the case of modifica- tion/retrofit in existing power plants): 5 years of historical data (or 3 years in the case of non hydro project activities) are available	1,2	<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>NA</td></tr><tr><td>Compliance provable?</td><td>NA</td></tr><tr><td>Evidences provided in the PDD?</td><td>NA</td></tr><tr><td>Compliance verified?</td><td>NA</td></tr></table>		Applicability checklist	Yes / No	Criterion discussed in the PDD?	NA	Compliance provable?	NA	Evidences provided in the PDD?	NA	Compliance verified?	NA	☒	☒
Applicability checklist	Yes / No															
Criterion discussed in the PDD?	NA															
Compliance provable?	NA															
Evidences provided in the PDD?	NA															
Compliance verified?	NA															
B.2.5.	Criterion 4: Defined electricity grid boundaries	1,2	<table><tr><td>Applicability checklist</td><td>Yes / No</td></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>		Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Evidences provided in the PDD?	Yes	Compliance verified?	Yes	☒	☒
Applicability checklist	Yes / No															
Criterion discussed in the PDD?	Yes															
Compliance provable?	Yes															
Evidences provided in the PDD?	Yes															
Compliance verified?	Yes															
B.2.6.	Criterion 5: Approved inclusion in other methodolo- gies (if applied only)	1,2	<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>NA</td></tr><tr><td>Compliance provable?</td><td>NA</td></tr><tr><td>Evidences provided in the PDD?</td><td>NA</td></tr><tr><td>Compliance verified?</td><td>NA</td></tr></table>		Applicability checklist	Yes / No	Criterion discussed in the PDD?	NA	Compliance provable?	NA	Evidences provided in the PDD?	NA	Compliance verified?	NA	☒	☒
Applicability checklist	Yes / No															
Criterion discussed in the PDD?	NA															
Compliance provable?	NA															
Evidences provided in the PDD?	NA															
Compliance verified?	NA															
B.2.7.	Criterion 6: Exclusion of fuel switching activities	1,2	<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr></table>		Applicability checklist	Yes / No	☒	☒								
Applicability checklist	Yes / No															

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			Criterion discussed in the PDD?	Yes		
			Compliance provable?	Yes		
			Evidences provided in the PDD?	Yes		
			Compliance verified?	Yes		
B.2.8.	Criterion 7: Exclusion of biomass fired power plants	1,2	Applicability checklist		Yes / No	
			Criterion discussed in the PDD?	NA		
			Compliance provable?	NA		
			Evidences provided in the PDD?	NA		
			Compliance verified?	NA		
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.	1,2	Applicability checklist		Yes / No	
			Criterion discussed in the PDD?	NA		
			Compliance provable?	NA		
			Evidences provided in the PDD?	NA		
			Compliance verified?	NA		
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	1,2	Boundary checklist		Yes / No	
			Source and gas(es) discussed by the PDD?	NA		
			Inclusion / exclusion justified?	NA		
			Explanation / Justification sufficient?	NA		
			Consistency with monitoring plan?	NA		
B.3.2.	Source: Emissions from combustion of fossil fuels	1,2	Boundary checklist		Yes / No	
			Source and gas(es) discussed by the PDD?	NA		

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required to operate the geothermal power plant (geothermal power plants only) Gas(es): CO ₂ Type: Project Emissions			Inclusion / exclusion justified?	NA		
			Explanation / Justification sufficient?	NA		
			Consistency with monitoring plan?	NA		
B.3.3.	Source: Emissions from the reservoir (hydro power plants only) Gas(es): , CH ₄ Type: Project Emissions	1,2	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.3.4.	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	1,2	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	1,2	Boundary checklist	Yes / No	☒	☒
			Source and gas(es) discussed by the PDD?	NA		
			Inclusion / exclusion justified?	NA		
			Explanation / Justification sufficient?	NA		
			Consistency with monitoring plan?	NA		
B.3.6.	Source: Emissions from electricity generation in	1,2	Boundary checklist	Yes / No	CAR11	☒

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fossil fuel fired power plants of imported electricity (project electricity consumption) Gas(es): CO ₂			Source and gas(es) discussed by the PDD?		CAR	
			Inclusion / exclusion justified?		CAR	
			Explanation / Justification sufficient?		CAR	
			Consistency with monitoring plan?		CAR	
			<u>Corrective Action Request No.11.</u> The PDD should inform whether the project activity causes any emissions due to project electricity consumption. If this is the case, the parameter “Emissions from electricity generation in fossil fuel fired power plants of imported electricity (project electricity consumption)” has 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?	1,2	Referring to the delineation of grid boundaries which is provided by NDRC (China NDA), the connected electricity system is defined as the China Southern Power Grid, which was also verified by the auditor on 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	<u>Corrective Action Request No.12.</u> There should be a clearly description in the chapter B.4.of the PDD that if the baseline is represented by the combined margin of the grid the activity will be connected to.		CAR12	☒
B.4.2.	In case of any modification or retrofit of existing facilities: Is data available to determine the historic production level?	1,2	NA		☒	☒
B.4.3.	In case of any modification or retrofit of existing facilities: Have conservative assumptions been ap-	1,2	NA		☒	☒

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plied in order to estimate the point in time when the existing equipment needs to be replaced?					
Changes required for methodology implementation in 2 nd and 3 rd crediting periods					
B.4.4.	Has the continued validity of the baseline been correctly assessed?	1,2	<u>Corrective Action Request No.13.</u> There should be a description in the chapter B.4. of the PDD to address how to assess the continued validity of the baseline and how to update the base in the 2 nd and 3 rd crediting periods.	CAR13	☒
B.4.5.	Has the baseline been updated with new data?	1,2	See CAR13	See CAR13	☒
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)?	1,2,1 9- 25- 29	During the on-site audit, the following evidences are submitted: - Feasibility Study Report, dated Jul, 2003 - FSR Approval, dated Sep. 27 th , 2003 - Project Construction Start Document (in Nov 2003) - Construction, Metallic Framework and Electrical Equipments Installation Agreement of the Head of Pivot Engineering, Mar.25 th , 2004 - Purchasing Contract of the Turbine, Generator and Other Accessories, May.13 th , 2004 - Environment Impact Assessment Report, dated Jul, 2004 - EIA Approval, dated Oct. 9 th , 2004 - Meeting Proposal for The CDM Development, dated Sep.12 th , 2005	CAR14	☒

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		- Directorate Board Decision on CDM development, dated Oct.3rd, 2005 - The Response of The Loan Application Based on CDM Consideration, dated Oct.20th, 2005 - The RMB Capital Loan Contract, dated Dec.30th, 2005 As stated in A.4.3.10 of this protocol, the project construction was started in Nov 2003, which could be found in the "River Diversion and Closure Engineering Design and Tiding Over The Flood Season Analysis Report". After that, the construction of the diversion tunnel engineering bid section SNJ/C3-2 was stopped from Apr 2005, and the construction of the head of pivot bid section SNJ/C2 Material Field was stopped from Jun 2005, which were caused by the bad geological conditions leading to the cost raised. This raised cost prevented the project from going on because of the shortage of the capital. Based on this situation, the project owner began to consider CDM to help to improve the financial return rate and the directorate board decision on CDM development was made on Oct.3rd, 2005. Since the bank approved the loan application on Oct.20th, 2005 according to the project owner's CDM consideration, the construction of the project was recommenced on Oct.25th, 2005. <u>Corrective Action Request No.14</u> 1. A table listing the milestones of the project activity regarding to the CDM consideration should be available in the revised PDD. 2. Please explain why the construction was started before the EIA and the approval of EIA in the PDD. 3. Please indicate which values were used for IRR at the time of final investment decision and provide evidences.		

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B.5.2.	Have realistic and credible alternatives been identified providing comparable outputs or services? (step 1a)	1,2	The project sponsor is a hydro project developer, the possible alternatives to the project include: (1) The proposed hydropower plant development not undertaken as a CDM project activity; (2) Construction of a fossil fuel power plant with the same amount of annual electricity generation; (3) Construction of a power plant using other renewable energy sources with the same annual electricity generation; (4) China Southern Power Grid as the provider for the same electricity generation as the proposed project.	☒	☒
B.5.3.	Is the project activity without CDM included in these alternatives? (step 1a)	1,2	Yes, it is included as the first option, please refer to B.5.2 above.	☒	☒
B.5.4.	Is a discussion provided for all identified alternatives concerning the compliance with applicable laws and regulations? (step 1b)	1,2	Yes, the PDD states that, according to "Guidance on Industrial Structural Adjustment (Version 2005)" issued by National Development & Reform Commission on Dec.2nd, 2005", it proclaims that conventional fossil fuel power units with single capacity below 300MW is prohibited except for small-scale power grid in Tibet, Xinjiang and Hainan. Therefore, alternative (2) is not in line with the national rule and can not be considered as the baseline scenario. Alternative (1) and alternative (4) is in compliance with current laws and regulations. <u>Clarification Request No.1</u> The document of "Guidance on Industrial Structural Adjustment (Version 2005)" should be provided to the DOE.	CR1	☒
B.5.5.	In case the PDD argues that specific laws are not enforced in the country or region: Is evidence available concerning that	1,2	All the laws quoted in the PDD are enforced in this project; hence, this section is not applicable.	☒	☒

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statement? (step 1b)					
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 project activity will produce economic benefits (from electricity sale in the future) other than CERs income, 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, however, in this case, the baseline scenario is the China Southern Power Grid, hence, Option II can't be adopted either. Thus, Option III (benchmark analysis) is the only applicable alternative.	☒	☒
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	NA	☒	☒
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	NA	☒	☒
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	Option III, the benchmark analysis is applied. The IRR is the most suitable financial indicator. A benchmark analysis in which the Internal Rate of Return (IRR) of the project is calculated and compared to a benchmark stated in the "Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects", which indicates the financial benchmark rate of return (after tax) of Chinese power industries accounts for 8% of IRR on total investment. <u>Clarification Request No.2</u> 1. The evidence of the benchmark of the IRR should be provided to the DOE. 2. In the FSR, the economic assessment criteria is based on the	CR2	☒

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		“Inform on Economic Parameters Assessment of Construction Projects”, which is different from the “Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects (version 2)” stated in the PDD, and the benchmark of the IRR on total investment mentioned in the FSR is 6%, which is different from the 8% in the PDD. Please clarify the reason.		
B.5.10. In case of Option II or Option III: Is the calculation of financial figures for this indicator correctly done for all alternatives and the project activity?	1,2, , 7,18, 37,3 8	<u>Corrective Action Request No.15.</u> 1. The total static investment in the FSR is 126271.18×10^4 RMB , but in the PDD it's 1282.7118 million RMB; the average annual O&M cost in the FSR is 2674.78×10^4 RMB, but in the PDD it's 27.6158 million RMB; the project life time in the FSR is 30 years, but in the PDD it is 35 years; the IRR in the FSR is 6.88%, but in the PDD it's 6.73%. The differences should be explained in the revised PDD and the evidences should be provided to the DOE. 2. As the IRR in the FSR is 6.88%, which is higher than the benchmark mentioned in the FSR (6%), the reason of applying for CDM registration should be explained in the PDD. 3. The correct IRR calculation Excel spreadsheet should be provided to the DOE. 4. The IRR (with CDM) calculation result in the chapter B.5.of the PDD is 6.73% while the statement in the chapter B.4.is 6.81%. This should be corrected in the revised PDD. Furthermore, the investment analysis should not include the costs incurred before the decision to recommence the project activity. Thus, the costs before the decision to recommence the project activity with CDM consideration should not accounted into the IRR calculation. 5. Both the variation of the electricity tariff and electricity output should be included in the sensitive analysis.	CAR15	☒

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		6. The reason of choosing +/-10% as the range of the IRR sensitivity analysis should be explained in the PDD. 7. Provide the Power Purchase Agreement with period of fixed price.		
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,	See CAR15	See CAR15	☒
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	NA	☒	☒
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	NA	☒	☒
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	NA	☒	☒
B.5.15. Have other activities in the host country / region similar to the project activity been identified and are these activities appropriately analyzed by the PDD (step 4a)?	1,2	Yes, The hydropower stations built after 2002 in Yunnan Province with the installed capacity of 150-300MW are chosen for the common practice analysis. <u>Corrective Action Request No.16.</u> 1. It should be clearly evidenced by documents that it is reasonable to limit the common practice analysis only to Yunnan province and not to China Southern Power Grid, and the installed capacity is limited to 150-300MW.	CAR16	☒

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		2. The evidence should be submitted to demonstrate that all the similar activities have been listed in the table of the common practice analysis projects.		
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	The completed Nalan Hydropower Station is a key project of “Electricity Delivery From The West to The East” of Yunnan province; it is less difficult in development. The profit generated by it is better than this project. The completed Longma Hydropower Station has the better hydraulic condition, geographic location and investment benefit comparing with this project. It can therefore be concluded that hydropower projects implemented previously or currently underway in Yunnan Province did not face the same barriers as the proposed project, and therefore the project can not be considered common practice. Clarification Request No.3 The evidences should be provided to demonstrate that the similar projects do not face the barriers of the proposed project activity.	CR3	☒
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?	1,2	The PDD explains that the CDM revenues help to overcome the financial unattractiveness of the project activity, which will improve IRR of the project to exceed the benchmark (8%). See CAR15	See CAR15	☒
B.6. Emissions reductions				
<i>B.6.1. Explanation of methodological choices</i>				
B.6.1.1. Is it explained how the procedures provided in the methodology are applied by the proposed project activity?	1,2	The following steps are described in a transparent manner: -- Step1: Estimate the Baseline Emission (BEy) -- Step2: Determine the combined margin CO₂ Emission Factor (EF_{grid,CM,y}) of the grid -- Step3: Estimate the Project Emission (PEy) -- Step4: Estimate leakage (LEy)	☒	☒

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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, the combined margin CO ₂ Emission Factor (EF _{grid,CM,y}) of the grid has been chosen ex-ante as per the option offered by Tool to Calculate The Emission Factor For an Electricity System (Version 01).	☒	☒
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	According to ACM0002 version 07, the power density of this project is greater than 10 W/m ² , so the project emission (PEy) is zero. See CAR1 and CAR10. <u>Corrective Action Request No.17.</u> The data of the power density is 990W/m ² which is wrong based on the calculation. It should be corrected in the revised PDD.	See CAR1 and CAR10 CAR17	☒
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, the formulae to calculate the baseline emissions are correctly presented according to ACM0002 version 07, the baseline emission (BEy) calculation is BEy=EGy × EF _{grid,CM,y} . The combined margin CO ₂ Emission Factor (EF _{grid,CM,y}) of the grid has been chosen ex-ante as per the option offered by Tool to Calculate The Emission Factor For an Electricity System (Version 01).	☒	☒
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, 32	The “simple OM” and “option (b)-The set of power capacity additions in the electricity system that comprise 20% of the system generation (in MWh) and that have been built most recently” are chosen for the OM and BM emission factor calculation.	☒	☒
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?	1,2	Yes, the six steps are applied and described correctly in the PDD according the Tool to Calculate The Emission Factor For an Electricity System (Version 01). The calculated EF _{OM} is 1.0119 tCO ₂ e/MWh and EF _{BM} is 0.6748 tCO ₂ e /MWh, the calculation result of the EF _{grid,CM,y} is 0.84335 tCO ₂ e/MWh, which is same to the calculated results published by	CR4	☒

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		NDRC(China DAN). <u>Clarification Request No.4</u> The EF calculation Excel spreadsheet in English should be provided to the DOE.		
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 the projects in the Tool to Calculate The Emission Factor For an Electricity System (Version 01) are used. The weighting w_{OM} and the weighting w_{BM} are both taken 0.5 as default for the first crediting period. For the second and third crediting period, $w_{OM}=0.25$ and $w_{BM}=0.75$.	☒	☒
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 above.	☒	☒
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 in accordance with the methodology.	☒	☒
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	1,2	Not applicable. According to ACM0002 version 07, both the project emissions and leakage are taken as zero.	☒	☒
B.6.1.11. Is option A (preferred approach) or option B chosen for the determination of the CO2	1,2	See B.6.1.10 above.	☒	☒

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emission coefficient COEF _{i,y} and is COE-F _{i,y} correctly determined?										
B.6.1.12. Are formulae required for the determination of emission reductions correctly presented?	1,2	Formulae in the PDD are clearly presented for the determination of emission reductions. As the project emissions and leakage are both zero, the emission reduction is equal to the baseline emission.	☒	☒						
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	<u>Corrective Action Request No.18.</u> 1. The following parameters are missing in B.6.2.of the PDD. Project participants are requested to include them in B.6.2. of the PDD with all parameter specifications. 1)EF _{Res} . Default emission factor for emission from reservoirs. 2)CAP _{BL} . Installed capacity of the hydro power plant before the implementation of the project activity. 3)A _{BL} . Area of the reservoir measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m ²). 2. The title and description of FC _{i,y} , NCV _{i,y} , EF _{CO2,i,y} , EG _y should be in line with the methodology of ACM0002.	CAR1 8	☒						
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	Yes, the ex-ante option is chosen for EF _{OM} and the first crediting period for EF _{BM} .	☒	☒						
Fill in the required amount of sub checklists for monitoring parameter and comment any line answered with “No”										
B.6.2.3. Parameter Title: GWP _{CH4} Global warming potential of methane valid for the relevant	1,2	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>NA</td></tr><tr><td>Data unit correctly expressed?</td><td>NA</td></tr></table>	Data Checklist	Yes / No	Title in line with methodology?	NA	Data unit correctly expressed?	NA	☒	☒
Data Checklist	Yes / No									
Title in line with methodology?	NA									
Data unit correctly expressed?	NA									

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commitment period (tCO2/tCH4)		Appropriate description of parameter?	NA		
		Source clearly referenced?	NA		
		Correct value provided?	NA		
		Has this value been verified?	NA		
		Choice of data correctly justified?	NA		
		Measurement method correctly described?	NA		
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)	1,2			☒	☒
		Data Checklist	Yes / No		
		Title in line with methodology?	NA		
		Data unit correctly expressed?	NA		
		Appropriate description?	NA		
		Source clearly referenced?	NA		
		Correct value provided?	NA		
		Has this value been verified?	NA		
		Choice of data correctly justified?	NA		
		Measurement method correctly described?	NA		
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	1,2			☒	☒
		Data Checklist	Yes / No		
		Title in line with methodology?	NA		
		Data unit correctly expressed?	NA		
		Appropriate description?	NA		
		Source clearly referenced?	NA		
		Correct value provided?	NA		
		Has this value been verified?	NA		
		Choice of data correctly justified?	NA		
		Measurement method correctly described?	NA		
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)	1,2			See CAR18	☒
		Data Checklist	Yes / No		
		Title in line with methodology?	No		
		Data unit correctly expressed?	No		

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		Appropriate description of parameter?	No		
		Source clearly referenced?	No		
		Correct value provided?	No		
		Has this value been verified?	No		
		Choice of data correctly justified?	No		
		Measurement method correctly described?	No		
		See CAR18			
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.	1,2	Data Checklist	Yes / No	See CAR18	☑
		Title in line with methodology?	No		
		Data unit correctly expressed?	No		
		Appropriate description of parameter?	No		
		Source clearly referenced?	No		
		Correct value provided?	No		
		Has this value been verified?	No		
		Choice of data correctly justified?	No		
		Measurement method correctly described?	No		
		See CAR18			
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 (m²).	1,2	Data Checklist	Yes / No	See CAR18	☑
		Title in line with methodology?	No		
		Data unit correctly expressed?	No		
		Appropriate description of parameter?	No		
		Source clearly referenced?	No		
		Correct value provided?	No		
		Has this value been verified?	No		
		Choice of data correctly justified?	No		
		Measurement method correctly described?	No		
		See CAR18			

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B.6.2.9. Parameter Title: Emission factor of the grid (EF _{CM} in tCO ₂ /MWh)	1,2	<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> In B.6.1.of the PDD.	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	☒	☒
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																					
B.6.2.10. Parameter Title: Operating margin (EF _{OM} in tCO ₂ /MWh) emission factor of the grid	1,2	<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?</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> In Annex 3 of the PDD.	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	☒	☒
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																					
B.6.2.11. Parameter Title: Build margin (EF _{BM} intCO ₂ /MWh) emission factor of the grid	1,2	<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>	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	☒	☒				
Data Checklist	Yes / No																					
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Source clearly referenced?	Yes																					
Correct value provided?	Yes																					
Has this value been verified?	Yes																					

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		Choice of data correctly justified?	Yes																				
		Measurement method correctly described?	Yes																				
		In Annex 3 of the PDD.																					
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)	1,2	<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>No</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> See CAR18		Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	No	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	See CAR18	☒
Data Checklist	Yes / No																						
Title in line with methodology?	Yes																						
Data unit correctly expressed?	Yes																						
Appropriate description of parameter?	No																						
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																						
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)	1,2	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>No</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> See CAR18		Data Checklist	Yes / No	Title in line with methodology?	No	Data unit correctly expressed?	Yes	Appropriate description of parameter?	No	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	See CAR18	☒
Data Checklist	Yes / No																						
Title in line with methodology?	No																						
Data unit correctly expressed?	Yes																						
Appropriate description of parameter?	No																						
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																						
B.6.2.14. Parameter Title: $EF_{CO_2,i,y}$ and $EF_{CO_2,m,i,y}$ CO2 emission factor of fossil fuel type i in year y (tCO2/GJ)	1,2	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr></table>		Data Checklist	Yes / No	Title in line with methodology?	No	Data unit correctly expressed?	Yes	See CAR18	☒												
Data Checklist	Yes / No																						
Title in line with methodology?	No																						
Data unit correctly expressed?	Yes																						

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		Appropriate description of parameter?	No		
		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		
		See CAR18			
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 EG _y) in year y or hour h (MWh)	1,2	Data Checklist	Yes / No	See CAR18	☑
		Title in line with methodology?	Yes		
		Data unit correctly expressed?	Yes		
		Appropriate description of parameter?	No		
		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		
		See CAR18			
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)	1,2	Data Checklist	Yes / No	☑	☑
		Title in line with methodology?	NA		
		Data unit correctly expressed?	NA		
		Appropriate description of parameter?	NA		
		Source clearly referenced?	NA		
		Correct value provided?	NA		
		Has this value been verified?	NA		
		Choice of data correctly justified?	NA		
		Measurement method correctly described?	NA		
B.6.2.17. Parameter Title: η _{m,y}	1,2			☑	☑

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Average net energy conversion efficiency of power unit m in year y		Data Checklist	Yes / No		
		Title in line with methodology?	NA		
		Data unit correctly expressed?	NA		
		Appropriate description of parameter?	NA		
		Source clearly referenced?	NA		
		Correct value provided?	NA		
		Has this value been verified?	NA		
		Choice of data correctly justified?	NA		
		Measurement method correctly described?	NA		
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.	1,2	Data Checklist	Yes / No	☒	☒
		Title in line with methodology?	NA		
		Data unit correctly expressed?	NA		
		Appropriate description of parameter?	NA		
		Source clearly referenced?	NA		
		Correct value provided?	NA		
		Has this value been verified?	NA		
		Choice of data correctly justified?	NA		
		Measurement method correctly described?	NA		
B.6.2.18. Parameter Title: fraction of time with low costs /must run plant at the margin (for simple adjusted OM only)	1,2	Data Checklist	Yes / No	☒	☒
		Title in line with methodology?	NA		
		Data unit correctly expressed?	NA		
		Appropriate description of parameter?	NA		
		Source clearly referenced?	NA		
		Correct value provided?	NA		
		Has this value been verified?	NA		
		Choice of data correctly justified?	NA		
		Measurement method correctly described?	NA		

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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. The projection based on the same procedures is used for the future monitoring.	☒	☒
B.6.3.2. Are the GHG calculations documented in a complete and transparent manner?	1,2	The entire calculation process is fully demonstrated in B.6.3 and the data are completely presented in Annex 3 of the PDD.	☒	☒
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?	1,2, 32	See CR4	See CR4	☒
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, the data is consistent with other parts of the PDD, e.g. table A.4.4 describing the estimated amount of emission reductions.	☒	☒
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	As demonstrated in the PDD, the hydropower project will result in fewer GHG emissions than the baseline scenario.	☒	☒
B.6.4.2. Is the form/table required for the indication of projected emission reductions correctly applied?	1,2	Yes, the table is complete; it includes emissions due to the project activity, baseline emissions, leakage emissions and the overall emission reductions.	☒	☒
B.6.4.3. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	1,2	Yes, the ex ante estimate of emission reductions due to the project is calculated for a first crediting period of 7 years starting with the expected start of crediting date on 01/10/2008.	☒	☒

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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 consistent	☒	☒																						
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	<u>Corrective Action Request No.19</u> 1. The tables in the chapter B.7.1.of the PDD should be compliant to the format required by the PDD template. 2. The correct parameter description, source of data, value, measurement methods and procedures, QA/QC procedures and comments for all the data should be indicated in the tables in the chapter B.7.1.of the PDD. 3. The reference to the standards, measurement accuracy should be indicated in the tables in the chapter B.7.1.of the PDD.	CAR19	☒																						
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	<table><tr><th>Monitoring 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 for estimation?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>No</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/OC procedures described?</td><td>Yes</td></tr></table>	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?	No	Has this value been verified?	No	Measurement method correctly described?	Yes	Correct reference to standards?	No	Indication of accuracy provided?	No	QA/OC procedures described?	Yes	See CAR19	☒
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?	No																									
Has this value been verified?	No																									
Measurement method correctly described?	Yes																									
Correct reference to standards?	No																									
Indication of accuracy provided?	No																									
QA/OC procedures described?	Yes																									

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		QA/QC procedures appropriate?	Yes																										
		See CAR19																											
B.7.1.3. Parameter Title: TEGy Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y (in MWh).	1,2	<table><tr><th>Monitoring 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>No</td></tr><tr><td>Correct value provided for estimation?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>No</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>No</td></tr><tr><td>QA/QC procedures appropriate?</td><td>No</td></tr></table> See CAR19		Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	No	Correct value provided for estimation?	No	Has this value been verified?	No	Measurement method correctly described?	Yes	Correct reference to standards?	No	Indication of accuracy provided?	No	QA/QC procedures described?	No	QA/QC procedures appropriate?	No	See CAR19	☑
Monitoring Checklist	Yes / No																												
Title in line with methodology?	Yes																												
Data unit correctly expressed?	Yes																												
Appropriate description of parameter?	Yes																												
Source clearly referenced?	No																												
Correct value provided for estimation?	No																												
Has this value been verified?	No																												
Measurement method correctly described?	Yes																												
Correct reference to standards?	No																												
Indication of accuracy provided?	No																												
QA/QC procedures described?	No																												
QA/QC procedures appropriate?	No																												
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)	1,2	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>NA</td></tr><tr><td>Data unit correctly expressed?</td><td>NA</td></tr><tr><td>Appropriate description of parameter?</td><td>NA</td></tr><tr><td>Source clearly referenced?</td><td>NA</td></tr><tr><td>Correct value provided for estimation?</td><td>NA</td></tr><tr><td>Has this value been verified?</td><td>NA</td></tr><tr><td>Measurement method correctly described?</td><td>NA</td></tr><tr><td>Correct reference to standards?</td><td>NA</td></tr><tr><td>Indication of accuracy provided?</td><td>NA</td></tr><tr><td>QA/QC procedures described?</td><td>NA</td></tr></table>		Monitoring Checklist	Yes / No	Title in line with methodology?	NA	Data unit correctly expressed?	NA	Appropriate description of parameter?	NA	Source clearly referenced?	NA	Correct value provided for estimation?	NA	Has this value been verified?	NA	Measurement method correctly described?	NA	Correct reference to standards?	NA	Indication of accuracy provided?	NA	QA/QC procedures described?	NA	☑	☑		
Monitoring Checklist	Yes / No																												
Title in line with methodology?	NA																												
Data unit correctly expressed?	NA																												
Appropriate description of parameter?	NA																												
Source clearly referenced?	NA																												
Correct value provided for estimation?	NA																												
Has this value been verified?	NA																												
Measurement method correctly described?	NA																												
Correct reference to standards?	NA																												
Indication of accuracy provided?	NA																												
QA/QC procedures described?	NA																												

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		QA/QC procedures appropriate?	NA		
B.7.1.5. Parameter Title: PEFC _{j,y} CO2 emissions from fossil fuel combustion in process j during the year y (tCO2/yr). Calculated as per the latest version of the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion"	1,2	Monitoring Checklist	Yes / No	☑	☑
		Title in line with methodology?	NA		
		Data unit correctly expressed?	NA		
		Appropriate description of parameter?	NA		
		Source clearly referenced?	NA		
		Correct value provided for estimation?	NA		
		Has this value been verified?	NA		
		Measurement method correctly described?	NA		
		Correct reference to standards?	NA		
		Indication of accuracy provided?	NA		
		QA/QC procedures described?	NA		
		QA/QC procedures appropriate?	NA		
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	See CAR19	☑
		Title in line with methodology?	Yes		
		Data unit correctly expressed?	Yes		
		Appropriate description of parameter?	No		
		Source clearly referenced?	No		
		Correct value provided for estimation?	No		
		Has this value been verified?	No		
		Measurement method correctly described?	No		
		Correct reference to standards?	No		
		Indication of accuracy provided?	No		
		QA/QC procedures described?	No		
		QA/QC procedures appropriate?	No		
B.7.1.7. Parameter Title: A _{PJ} (only applicable to hydropower plant projects with reservoir)	1,2	See CAR19		See CAR19	☑
		Monitoring Checklist	Yes / No		

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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).		Title in line with methodology?	Yes		
		Data unit correctly expressed?	Yes		
		Appropriate description of parameter?	No		
		Source clearly referenced?	No		
		Correct value provided for estimation?	No		
		Has this value been verified?	No		
		Measurement method correctly described?	No		
		Correct reference to standards?	No		
		Indication of accuracy provided?	No		
		QA/QC procedures described?	No		
		QA/QC procedures appropriate?	No		
		See CAR19			
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)	1,2	Monitoring Checklist	Yes / No	☒	☒
		Title in line with methodology?	NA		
		Data unit correctly expressed?	NA		
		Appropriate description of parameter?	NA		
		Source clearly referenced?	NA		
		Correct value provided for estimation?	NA		
		Has this value been verified?	NA		
		Measurement method correctly described?	NA		
		Correct reference to standards?	NA		
		Indication of accuracy provided?	NA		
		QA/QC procedures described?	NA		
		QA/QC procedures appropriate?	NA		
		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)	1,2		
Title in line with methodology?	NA				
Data unit correctly expressed?	NA				
Appropriate description of parameter?	NA				

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		Source clearly referenced?	NA		
		Correct value provided for estimation?	NA		
		Has this value been verified?	NA		
		Measurement method correctly described?	NA		
		Correct reference to standards?	NA		
		Indication of accuracy provided?	NA		
		QA/QC procedures described?	NA		
		QA/QC procedures appropriate?	NA		
B.7.1.10. Parameter Title: $M_{s,y}$ Quantity of steam produced during the year y. (for geothermal projects only)	1,2	Monitoring Checklist	Yes / No	☒	☒
		Title in line with methodology?	NA		
		Data unit correctly expressed?	NA		
		Appropriate description of parameter?	NA		
		Source clearly referenced?	NA		
		Correct value provided for estimation?	NA		
		Has this value been verified?	NA		
		Measurement method correctly described?	NA		
		Correct reference to standards?	NA		
		Indication of accuracy provided?	NA		
		QA/QC procedures described?	NA		
		QA/QC procedures appropriate?	NA		
Parameters related to the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion"					
B.7.1.11. Parameter Title: Quantity of fuel type i combusted in process j during the year y $FC_{i,j,y}$	1,2	Monitoring Checklist	Yes / No	☒	☒
		Title in line with methodology?	NA		
		Data unit correctly expressed?	NA		
		Appropriate description of parameter?	NA		
		Source clearly referenced?	NA		
		Correct value provided for estimation?	NA		
		Has this value been verified?	NA		
		Measurement method correctly described?	NA		

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		Correct reference to standards?	NA		
		Indication of accuracy provided?	NA		
		QA/QC procedures described?	NA		
		QA/QC procedures appropriate?	NA		
B.7.1.12. Parameter title: Weighted average mass fraction of carbon in fuel type i in year y $W_{C,i,y}$	1,2	Monitoring Checklist	Yes / No	☒	☒
		Title in line with methodology?	NA		
		Data unit correctly expressed?	NA		
		Appropriate description of parameter?	NA		
		Source clearly referenced?	NA		
		Correct value provided for estimation?	NA		
		Has this value been verified?	NA		
		Measurement method correctly described?	NA		
		Correct reference to standards?	NA		
		Indication of accuracy provided?	NA		
		QA/QC procedures described?	NA		
		QA/QC procedures appropriate?	NA		
B.7.1.13. Parameter title: Weighted average density of fuel type i in year y $\rho_{i,y}$	1,2	Monitoring Checklist	Yes / No	☒	☒
		Title in line with methodology?	NA		
		Data unit correctly expressed?	NA		
		Appropriate description of parameter?	NA		
		Source clearly referenced?	NA		
		Correct value provided for estimation?	NA		
		Has this value been verified?	NA		
		Measurement method correctly described?	NA		
		Correct reference to standards?	NA		
		Indication of accuracy provided?	NA		
		QA/QC procedures described?	NA		
		QA/QC procedures appropriate?	NA		
B.7.1.14. Parameter title:	1,2			☒	☒

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Weighted average net calorific value of fuel type i in year y NCVi,y		Monitoring Checklist	Yes / No		
		Title in line with methodology?	NA		
		Data unit correctly expressed?	NA		
		Appropriate description of parameter?	NA		
		Source clearly referenced?	NA		
		Correct value provided for estimation?	NA		
		Has this value been verified?	NA		
		Measurement method correctly described?	NA		
		Correct reference to standards?	NA		
		Indication of accuracy provided?	NA		
		QA/QC procedures described?	NA		
		QA/QC procedures appropriate?	NA		
B.7.1.15. Parameter title: Weighted average CO2 emission factor of fuel type i in year y EF _{CO2,i,y}	1,2	Monitoring Checklist	Yes / No	☑	☑
		Title in line with methodology?	NA		
		Data unit correctly expressed?	NA		
		Appropriate description of parameter?	NA		
		Source clearly referenced?	NA		
		Correct value provided for estimation?	NA		
		Has this value been verified?	NA		
		Measurement method correctly described?	NA		
		Correct reference to standards?	NA		
		Indication of accuracy provided?	NA		
		QA/QC procedures described?	NA		
		QA/QC procedures appropriate?	NA		
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 envisioned situation?	1,2	Yes, the operational and management structure is clearly described and in compliance with the envisioned situation.		☑	☑
B.7.2.2. Are responsibilities and institutional	1,2	Corrective Action Request No.20		CAR20	☑

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arrangements for data collection and archiving clearly provided?		The responsible person (or role) that is in charge of data reading, verifying and archiving should be clearly defined in the revised PDD.		
B.7.2.3. Does the monitoring plan provide current good monitoring practice?	1,2	<u>Corrective Action Request No.21</u> 1. According chapter B.7.1 of the PDD, all the data that EG_y, TEG_y, CapP_j and AP_j should be monitored, of which the monitoring process should be clearly indicated in the revised PDD. 2. The description of “24:00 on the last day of every month” in the chapter 4 of the monitoring plan is not a correct time manner. 3. The description of the power grid offers “the electricity purchase/sales invoice” the chapter 4 of the monitoring plan is unreasonable, because the invoice should be issued by the project owner. 4. According to ACM0002, the data of EG_y and TEG_y should be hourly measured and monthly recorded, hence, please indicate chapter 4 of the monitoring plan that how the project owner to record the electricity delivered to the grid and consumed by the project, including the recording frequency, media, responsible person, meters used, etc. 5. Please indicate chapter 4 of the monitoring plan that what the conventional procedure is to confirm the consistency of estimating method when the project owner and the power grid company can’t reach agreement on the conservative method to estimate reading during the troubles of the meters. 6. Please indicate chapter 5 of the monitoring plan that who is responsible for the meters calibration. <u>Clarification Request No.5</u>	CAR21 CR5	☒

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			1. Please clarify the meaning of “one-way metering ammeters” in the chapter 3 of the monitoring plan 2. Please provide the evidence of meter precision(0.5) which is mentioned in the chapter 3 of the monitoring plan		
B.7.2.4.	If applicable: Does annex 4 provide useful information enabling a better understanding of the envisioned monitoring provisions?	1,2	NA	☒	☒
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 date of completion of the baseline study and monitoring methodology is 30/05/2007.	☒	☒
B.8.2.	Is this consistent with the time line of the PDD history?	1,2	Yes. The PDD is version 01 and was finished on 26/03/2008. It is consistent with the time line of the PDD history.	☒	☒
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	Yes, Ms. Zhu Ling, from Coway International TechTrans Co., Ltd. is responsible for the study and application of the methodology.	☒	☒
B.8.4.	Is information provided whether this person / entity is also considered a project participant?	1,2	The above individuals or organizations are not the project participants.	☒	☒
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 opera-	1,2,7	<u>Corrective Action Request No.22</u>	CAR22	☒

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tional lifetime clearly defined and reasonable?	,20	- During the on site audit, it is verified that the project construction started in November of 2003, and the construction recommence date was on Oct.25th, 2005. Hence, the date 01/06/2008 is incorrect as the project starting date in the chapter C.1.1 of the PDD. - The expected operational lifetime of the project activity is 30 years which is defined in the FSR; please correct this in the revised PDD.		
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	The life time of the project is 30 years. Confirming with the provided evidence, such as purchasing contract and the business plan, the validator has the confidence that it's reasonable. Therefore the crediting period of 7 years with potential for 2 renewals is chosen as the crediting period. The estimated of the starting date of the first crediting period is 01/10/2008, or the registration date, whichever is later.	☒	☒
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?	1,9-11	The environmental impacts of the project activity such as ecological, waste water, air, noise, waste residue, migration settlement and measures taken have been clearly described. <u>Corrective Action Request No.23</u> The environment impacts of the project activity during the construction and operation periods should be described separately in the revised PDD.	CAR23	☒

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D.1.2.	Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been approved?	1,9-11	<u>Corrective Action Request No.24</u> The date of the EIA finished and approved should be provided in the revised PDD.	CAR24	☒
D.1.3.	Will the project create any adverse environmental effects?	1,9-11	Referring to the EIA and the approval of EIA, the project will create no negative environmental impacts.	☒	☒
D.1.4.	Were transboundary environmental impacts identified in the analysis?	1,9-11	The proposed project activity is located within China. Hence, this section is not applicable.	☒	☒
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?	1,9-11	Referred to the EIA and the approval of EIA, the impacts on the environment are not significant.	☒	☒
D.2.2.	Does the project comply with environmental legislation in the host country?	1,9-11	Yes, the project is in conformity with the environmental legislation of 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?	1,2,33	In May 2007, public opinion survey was carried out at the main counties, villages, social communities which are involved in Sinanjiang Hydropower Station and the residents in the area of the project construction. <u>Corrective Action Request No.25</u> The date of the survey with the local stakeholders should be pro-	CAR25	☒

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CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
			vided in the revised PDD.		
E.1.2.	Have appropriate media been used to invite comments by local stakeholders?	1,2,3 3	Yes, the public opinion survey was carried out by distributing and collecting questionnaires. <u>Corrective Action Request No.26</u> The records and summary of the stakeholders opinion survey should be provided to the DOE	CAR26	☒
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?	1,9-11,3 3	The stakeholder consultation is required to be included in the EIA report according to the law of the people's republic of China on environmental impact assessment. It has been confirmed by the EIA review and site interview	☒	☒
E.1.4.	Is the undertaken stakeholder process that was carried out described in a complete and transparent manner?	1,9-11,3 3	Yes. The process is described in a complete and transparent manner. See CAR 26	See CAR26	☒
E.2. Summary of the comments received					
E.2.1.	Is a summary of the stakeholder comments received provided?	1,10,33	See CAR 26	See CAR26	☒
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?	1,10,33	See CAR 26	See CAR26	☒
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	See CAR3	See CAR3	☒

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CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
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-countries does not result in a diversion of ODA?	1,2	NA.	☒	☒
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, 32	Yes, the information is consistent with data presented by other sections of the PDD.	☒	☒
F.1.6.	Is the data provided verifiable? Has sufficient evidence been provided to the validation team?	1,2, 32	See CR4	See CR4	☒
F.1.7.	Does the additional information substantiate / support statements given in other sections of the PDD?	1,2, 32	Yes, the additional information supports statements given in other sections of the PDD.	☒	☒
Annex 5: Monitoring information					
F.1.8.	If additional background information on monitoring is provided: Is this information consistent with data presented in other	1,2	NA, as there is no supplementary information about the monitoring plan.	☒	☒

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
sections of the PDD?				
F.1.9. Is the information provided verifiable? Has sufficient evidence been provided to the validation team?	1,2	NA	☒	☒
F.1.10. Do the additional information and / or documented procedures substantiate / support statements given in other sections of the PDD?	1,2	NA	☒	☒

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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
CARs			
<u>Corrective Action Request No.1</u> After checking the FSR, the surface area at full reservoir level is 8.168 km ² , not 9.79km ² in the GSP PDD, also the power density calculation should be corrected accordingly.	A.2.1 A.2.2 A.2.3 A.2.4 A.4.1.2 B.6.1.3	The 9.79km ² is the inundated area employed here by error. It and the related power density are corrected in related section of PDD.	☒ The reservoir area has been modified to be consistent with the FSR.
<u>Corrective Action Request No.2.</u> The project name in the LoA issued by China NDRC is different with the PDD in the GSP, please correct this issue in the revised documents. And the MoC and the LoA from the country of the CERs buyer should be provided before the request of project registration.	A.3.2	The project name has been corrected. The name in the LoA by NDRC will be used in the PDD and all the relevant documents, which is "Yunnan Sinanjiang Hydropower Project" The application for LoA and MoC of UK is being processed.	☒ The project name has been changed to be consistent with LOA.
<u>Corrective Action Request No.3.</u> The country of the project participant Trading Emissions PLC described in the chapter A.3 of the PDD is Sweden while it is UK described in the Annex 1. Please correct this issue in the revised PDD.	A.3.3 F.1.1	It is corrected to UK.	☒ The country of the buyer has been corrected in PDD
<u>Corrective Action Request No.4.</u> The font of the characters in the chapter A.4.1.4 of the PDD is incompliant to the requirement of the PDD template, which should	A.4.1.1	The font has been changed.	☒ The modification is ok

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be changed for the consistency in the revised PDD. Please extend such kind of issue to other chapters of the PDD.			
<u>Corrective Action Request No.5.</u> To increase transparency, please clearly indicate the GPS data of both the powerhouse and the dam site. And the value of the longitude and latitude should be specified to seconds.	A.4.1.1	The GPS coordinates of the power plant and dam specified to seconds have been included in the updated PDD.	☒ The coordinates have been updated
<u>Corrective Action Request No.6.</u> The parameters of the equipments in the PDD are different with the equipments purchasing contract. The reason of the difference should be explained. The correction should be made in the revised PDD.	A.4.3.5	The equipment model "HL97.1-LJ-225, SF67-12/4300" refers to FSR, which is based on preliminary project design. When the purchase contract was drafted based on further elaborated design implementation study following the investment decision. These types of minor changes are to be expected during implementation. Relevant parameters of the equipments are revised in the A.4 part.	☒ The equipment parameters have been updated to be consistent with purchasing contract
<u>Corrective Action Request No.7.</u> Please specify in the revised PDD that if the project requires extensive initial training and maintenance efforts in order to be carried out as scheduled during the project period. Also the evidence should be provided to the DOE.	A.4.3.8 A.4.3.9	The technology applied in the project activity is rapidly maturing in China. No additional training for operation and maintenance for the project was required apart from that given by the equipment supplier. The statement on training and maintenance is added in the revised PDD.	☒ The description about the training and maintenance have been added in PDD
<u>Corrective Action Request No.8.</u> 1. The project schedule including the document of the construction start should be provided to the DOE to verify the compliance to the actual situation and planning. And the time schedule of the project activity should be added in the revised PDD. 2. As it has been seen by "The River Diversion and Closure Engineering Design and Tiding over The Flood Season Analysis	A.4.3.10	1. Project schedule has been added in section B.5 of the PDD.	☒ 1: Project schedule has been added in B.5 2: As clarified by client, the gap between CDM consultant agreement signing and CER purchasing contract signing is because of the difficulty to find the buyer, considering it

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Report" during the onsite audit the project construction was start in Nov 2003, please explain why it takes so long an interval till to start the GSP. Refer to the guidance of EB 41 annex 46, chapter C.5.b).		2. There is a construction cease during 2005. The CDM application starts after that. Due to the large scale of the hydropower project, interested buyers CER are few. It takes more than one year to find the interested buyer and negotiations. And the update of methodology ACM0002 (version 6 to 7) and relevant tools in Dec. 2007 cause a 3 months delay on submission for validation.	is a 201 MW project, the explanation is thought to be reasonable.
<u>Corrective Action Request No.9</u> 1. The title of the methodology ACM0002 should not be "Consolidated baseline and monitoring methodology for grid-connected electricity generation from renewable sources", but be "Consolidated baseline methodology for grid-connected electricity generation from renewable sources". Please extend such kind of issue to other chapters of the PDD. 2. The web site address of ACM0002 provided in chapter B.1 of the PDD is invalid, which should be referred to the correct address in the revised PDD. 3. Version 5 of the tool for the demonstration and assessment of additionality should be used.	B.1.1	1.The methodology title has been revised 2. And the address has been updated in the revised PDD. By the 31st of Aug.2008, it is accessible. 3. Tool for the demonstration and assessment of additionality Version 5 is applied in the PDD, and the version is updated here.	☑ 1:The methodology title has been updated. 2:The web address has been revised which is accessible. 3:Version 5 of the additionality tool has been adopted.
<u>Corrective Action Request No.10.</u> The calculation formula of the power density of the project activity should be indicated in	B.2.3 B.6.1.3	The power density calculation has been indicated in B.6.1. The relevant formula has been included in the updated PDD.	☑ The formula has been added in B.6.1 of PDD

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the chapter B.6.1 of the PDD.			
<u>Corrective Action Request No.11.</u> The CCPG is a connected electricity system. According to Annex 3, electricity is imported. Please describe in this chapter accordingly that the emissions are included. (see CR 1)	B.3.6	Description on the electricity importation from CCPG and how it's considered are added in B.3.6.	☒ The related description has been added in PDD
<u>Corrective Action Request No.12.</u> There should be a clearly description in the chapter B.4.of the PDD that if the baseline is represented by the combined margin of the grid the activity will be connected to.	B.4.1	The baseline emission is reflected by the product of electricity generation by the project activity and combine emission factor (CM) of related Power Grid. This description is added in B.4 part.	☒ It has been clearly indicated in PDD that the combined emission factor used for the baseline emission.
<u>Corrective Action Request No.13.</u> There should be a description in the chapter B.4. of the PDD to address how to assess the continued validity of the baseline and how to update the base in the 2nd and 3rd crediting periods.	B.4.4 B.4.5	The update for the 2 nd and 3 rd crediting period is described in the revised PDD part B.4.	☒ The description about the crediting period have been added in revised PDD.
<u>Corrective Action Request No.14</u> 1. A table listing the milestones of the project activity regarding to the CDM consideration should be available in the revised PDD. 2. The reason of why the CDM consideration was after the construction stop should be explained in the revised PDD. 3. Please indicate which values were used for IRR at the time of final investment decision and provide evidences.	B.5.1	1. Project milestone list is added in section B.5. 2. The statement why CDM consideration is after the construction stop is stated in the revised PDD B.5. (Barriers analysis section). 3. The values employed for final investment decision (construction recommence) include investment on asset, tariff, electricity output, tax rate and capital cost etc. A table of value and parameter for IRR is attached, which indicates the value input in details. Relevant evidences (FSR, Report, and Approval) have been submitted.	☒ 1: The timeline of the CDM activities have been listed together with the project activities. 2:The CDM consideration have been described in PDD, the project construction was stopped due to increasing investment, CDM mode was proposed and agreed at that time. It is thought to be logic. 3: Most of the financial para-

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			meters are derived from FSR which has been confirmed by reviewing the documents. The recoverable value of the investment prior to construction was assessed by the Yunnan Pinzheng Assets Appraisal Co.,Ltd, and then according to the "Guidance on the Assessment of Investment Analysis" paragraph 7, only limited to the potential reuse/resale of the the tangible assets The above process is thought to be acceptable.
<u>Corrective Action Request No.15.</u> 1. The differences between FSR and PDD(investment analysis parameters(total investment,O&M cost) should be explained in the revised PDD and the evidences should be provided to the DOE. 2. As the IRR in the FSR is 6.88%, which is higher than the benchmark mentioned in the FSR (6%), the reason of applying for CDM registration should be explained in the PDD. 3. The correct IRR calculation Excel spreadsheet should be provided to the DOE. 4. The IRR (with CDM) calculation result in the chapter B.5.of the PDD is 6.73% while the statement in the chapter B.4.is 6.81%. This should be corrected in the revised	B.5.10 B.5.11 B.5.17	1. A 20 million RMB addition for construction is reported in March 2005 which is referred for the IRR calculation. Then the total static investment differs from the one in FSR. According to FSR, there is annual 86.8×10^4 RMB cost in Migration Fund (for land occupation and Migration community development) for the first 10 operation years which cause the difference on O&M cost. It is indicated in the updated PDD and IRR spread sheet. All those factors cause change on the IRR of PDD and FSR which done in early preparation stage. A table of value and parameter for IRR is attached, which indicates the value input in details. Relevant evidences (FSR, Reports, and official Approval etc.) have been submitted.	☒ 1: The document which support the additional 20million investment has been provided and checked, the justification for the O&M cost change is also confirmed by FSR. 2: The 6% benchmark applied in the FSR has no clear reference, while the 8% benchmark have clear evidence and is commonly used for the hydro power project, it is thought to be reasonable to adopt it in PDD. 3:IRR spreadsheet has been

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PDD. Furthermore, the investment analysis should not include the costs incurred before the decision to recommence the project activity. Thus, the costs before the decision to recommence the project activity with CDM consideration should not accounted into the IRR calculation. 5. Both the variation of the electricity tariff and electricity output should be included in the sensitive analysis. 6. The reason of choosing +/-10% as the range of the IRR sensitivity analysis should be explained in the PDD. 7. Provide the Power Purchase Agreement with period of fixed price.		2. The IRR benchmark mentioned in the FSR (6%) is adopted according to design institute's own experience and project owner's request as inner benchmark for investment analysis. There is no clear reference for this. Project eases after about one year's construction. Benchmark analysis in PDD based on the virtual situation when project construction recommence, and the commonly clear applied benchmark (8%) with reference is employed. The reason to apply for CDM is elaborated in barrier analysis section of B.5. 3. The correct IRR calculation excel spreadsheet is provided. 4. 6.81% is a typing error and IRR is updated in the revised PDD according to the latest guideline on investment analysis issued by EB. The investment occurs before the project recommence refers to Tangible Assets Appraisal Report done by Kunming Assets Appraisal Consultancy, according to guidance on the treatment of costs incurred prior to the project activity start date (Guidance on the Assessment of Investment Analysis, version 2, EB 41 meeting). 5. The tariff as a variable has been added in the sensitivity analysis. 6. The range applied refers to "Guidance on the Assessment of Investment Analysis version 2, EB 41 meeting" is cited in the B.5 part of the revised PDD. 7. Power Purchase Agreement between project owner and Yunnan Grid Company which indicated the tariff price and the valid period is submitted.	offered 4: The typing error has been corrected and the tangible assets appraisal report has been checked 5: The electricity tariff has been included in the sensitivity analysis. 6: It has been described in PDD to justify the 10% range selection is reasonable, since for the variables, a variation beyond 10% is thought to be rare. 7: PPA has been provided.
<u>Corrective Action Request No.16</u>	B.5.15	1. Projects are considered similar if they are in the	☒

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1. It should be clearly evidenced by documents that it is reasonable to limit the common practice analysis only to Yunnan province and not to China Southern Power Grid, and the installed capacity is limited to 150-300MW. 2. The evidence should be submitted to demonstrate that all the similar activities have been listed in the table of the common practice analysis projects.		same country/region and/or rely on a broadly similar technology, are of a similar scale, and take place in a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing, etc. The installed capacity is limited to 50-300MW which is officially defined as middle scale. The procedure to select similar project activities is described in revised PDD. Relevant evidences are provided. 2. Relevant evidences for similar activities in the region we find are provided.	1: The Sichuan province is selected for the common practice considering the difference of the natural condition and economical condition, and 50-300MW is selected as the range for comparison which comply with national standard. 2: The evidence for the comparing projects have been provided.
<u>Corrective Action Request No.17.</u> The data of the power density is 990W/m², which is wrong based on the calculation. It should be corrected in the revised PDD.	B.6.1.3	The correct value is 24.61 W/m², the calculation is corrected in the revised PDD.	☒ The power density calculation have been corrected.
<u>Corrective Action Request No.18.</u> 1. The following parameters are missing in B.6.2. of the PDD. Project participants are requested to include them in B.6.2. of the PDD with all parameter specifications. 1) EF_{Res}. Default emission factor for emission from reservoirs. 2) CAP_{BL}. Installed capacity of the hydro power plant before the implementation of the project activity. 3) A_{BL}. Area of the reservoir measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m²). 2. The title and description of FC_{i,y}, NCV_{i,y},	B.6.2.1 B.6.2.6 B.6.2.7 B.6.2.8 B.6.2.12 B.6.2.13 B.6.2.14 B.6.2.15	1. These three parameters are added in B.6.2. 2. The title and description of FC_{i,y}, NCV_{i,y}, EF_{CO2,i,y}, EG_y have been verified according to ACM0002 and relevant tools.	☒ 1: The 3 parameters have been added in PDD 2: The title and description have been modified to be consistent with applied methodology

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EF _{CO2,i,y} , EG _y should be in line with the methodology of ACM0002.			
<u>Corrective Action Request No.19</u> 1. The tables in the chapter B.7.1.of the PDD should be compliant to the format required by the PDD template. 2. The correct parameter description, source of data, value, measurement methods and procedures, QA/QC procedures and comments for all the data should be indicated in the tables in the chapter B.7.1.of the PDD. 3. The reference to the standards, measurement accuracy should be indicated in the tables in the chapter B.7.1.of the PDD.	B.7.1.1 B.7.1.2 B.7.1.3 B.7.1.6 B.7.1.7	1. The table frame in chapter B.7.1 is corrected according to template and methodology. 2. Table is filled according to the methodology and tool for data source, value, measurement method and QA/QC procedures. 3. Standards, measurement accuracy is refer to the national standard, "Standards on electricity measurement device technology, DL/448-2000", which is mentioned in PDD.	☒ 1:The table format have been revised 2:The required input of table in B.7.1 has been completed 3:The accuracy and referred standard have been added in table of B.7.1
<u>Corrective Action Request No.20</u> The responsible person (or role) that is in charge of data reading, verifying and archiving should be clearly defined in the revised PDD.	B.7.2.2	The role, function and organization for the data reading, verifying and archiving is defined in B.7 of the revised PDD.	☒ The organization and responsibility have been described detailedly.
<u>Corrective Action Request No.21</u> 1. According chapter B.7.1 of the PDD, all the data that EG _y , TEG _y , CapP _j and AP _j should be monitored, of which the monitoring process should be clearly indicated in the revised PDD. 2. The description of "24:00 on the last day of every month" in the chapter 4 of the	B.7.2.3	1. Monitoring process on EG _y , TEG _y , CapP _j and AP _j is described in B.7 of the revised PDD. 2. The right correct time manner is "00". However the description "00:00 on the last day of every month" is de-	☒ 1:All data and parameters which need to be monitored has been included according to the methodology 2: The modification is acceptable. 3:The correction is ok

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monitoring plan is not a correct time manner. 3. The description of the power grid offers "the electricity purchase/sales invoice" the chapter 4 of the monitoring plan is unreasonable, because the invoice should be issued by the project owner. 4. According to ACM0002, the data of EGy and TEGy should be hourly measured and monthly recorded, hence, please indicate chapter 4 of the monitoring plan that how the project owner to record the electricity delivered to the grid and consumed by the project, including the recording frequency, media, responsible person, meters used, etc. 5. Please indicate in the monitoring plan what conventional procedure will be adopted to confirm the consistency of estimating method when the project owner and the power grid company can't reach agreement on the conservative method to estimate reading during the troubles of the meters. 6. Please indicate chapter 5 of the monitoring plan that who is responsible for the meters calibration.		leted from PDD, because the exact time for monthly meter reading is not unknown yet. 3. The wrong description on sales invoice is corrected. It should be issued by project owner. 4. The relevant measurement process based on requirements of ACM0002 for EGy and TEGy is described in B.7.1. 5. The dispute on measurement validity would be arbitrated by Yunnan Electrical Power Experiment and Research Institute. The relevant trouble analysis and conclusion would be reported for this dispute. 6. Yunnan Electrical Power Experiment and Research Institute is responsible for the meter calibration, which is present in revised PDD.	4: The process have been modified to be consistent with the methodology. 5: The description about the discrepancy handling process is deemed to be acceptable. 6: The responsible institute for the calibration have been clarified.
<u>Corrective Action Request No.22</u>	C.1.1	1. The recommence date 10/2005 is applied here as CDM project starting date. It is corrected in the C.1.1	☒

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1. During the on site audit, it is verified that the project construction started in November of 2003, and the construction recommence date was on Oct.25th, 2005. Hence, the date 01/06/2008 is incorrect as the project starting date in the chapter C.1.1 of the PDD. 2. The expected operational lifetime of the project activity is 30 years which is defined in the FSR; please correct this in the revised PDD.		of revised PDD. 2. The entire project lifetime is 35 years and the operational lifetime is 30 years. This has been corrected in the revised PDD.	1: The project construction restart date is selected as the project start date which is reasonable. 2: The 35 years included 5 years of construction and 30 years of operation
<u>Corrective Action Request No.23</u> The environment impacts of the project activity during the construction and operation periods should be described separately in the revised PDD.	D.1.1	The impact on environment in D.1.1 is stated separately based on construction period and operation period.	☒ The environmental influence during construction phase and operation phase have been described clearly, E.G waste water.
<u>Corrective Action Request No.24</u> The date of the EIA finished and approved should be provided in the revised PDD.	D.1.2	EIA was finished in April 2004, and on the 9th of Oct. 2004 it acquired the approval from Yunnan Environment Protection Bureau. These are present in D.1.2 part.	☒ The EIA timeline has been added in PDD
<u>Corrective Action Request No.25</u> The date of the survey with the local stakeholders should be provided in the revised PDD.	E.1.1	The time for the stakeholder survey is in Aug. 2003. it is mentioned in E.1.1 part of revised PDD.	☒ The stakeholder survey date has been described in PDD
<u>Corrective Action Request No.26</u> The records and summary of the stakeholders opinion survey should be provided to the DOE	E.1.2 E.1.4 E.2.1 E.3.1	The records and summary have been provided.	☒ The stakeholders investigation summary has been included in the EIA which has been provided

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CRs			
<u>Clarification Request No.1</u> The document of "Guidance on Industrial Structural Adjustment (Version 2005)" should be provided to the DOE.	B.5.4	The document has been provided.	☒ The document has been provided
<u>Clarification Request No.2</u> 1. The evidence of the benchmark of the IRR should be provided to the DOE. 2. In the FSR, the economic assessment criteria is based on the "Inform on Economic Parameters Assessment of Construction Projects", which is different from the "Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects (version 2)" stated in the PDD, and the benchmark of the IRR on total investment mentioned in the FSR is 6%, which is different from the 8% in the PDD. Please clarify the reason.	B.5.9	1. The IRR benchmark evidence is provided. 2. There is no clear description on IRR benchmark in "Inform on Economic Parameters Assessment of Construction Projects version 2". The benchmark is determined according to the design institute's own experience and the project owner's request as inner financial analysis benchmark during the project feasibility study. The IRR calculation in PDD is based on the situation when project recommenced. And the IRR benchmark in "Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects (version 2)" which is commonly recognized and is properly applied here.	☒ 1: Benchmark document has been provided 2: "Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects" is selected as the benchmark evidence, which is thought to be reasonable.
<u>Clarification Request No.3</u> The evidences should be provided to demonstrate that the similar projects do not face the barriers of the proposed project activity.	B.5.16	Evidence available doesn't indicate whether barriers encountered by the proposed project occur to similar projects or not. The available reference of similar project has been provided.	☒ It has been described in section B.5 of the PDD that the identified barriers would not prevent the implementation of at least one of the alternatives
<u>Clarification Request No.4</u> The EF calculation Excel spreadsheet in English should be provided to the DOE.	B.6.1.6 B.6.3.3	Excel spreadsheet of the calculation is provided.	☒ The emission factor calculation spreadsheet has been

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	F.1.6		provided
<u>Clarification Request No.5</u> Please clarify the meaning of “one-way metering ammeters” in the chapter 3 of the monitoring plan	B.7.2.3	1. The “one-way” metering ammeter has been corrected to “bilateral” metering ammeter in PDD. This means it can measure the electrical flow in two directions without changing the installation. The measurement technical document as evidence is provided.	☒ The correction is ok.



Annex 2: Information Reference List

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Reference No.	Document or Type of Information										
1.	Project Design Document for CDM project “Yunnan Sinanjiang Hydropower Project”, version 01 dated March 2008										
2.	The Consolidated Baseline Methodology for Grid-connected Electricity Generation from Renewable Sources, version 07										
3.	Tool for the demonstration and assessment of additionality, version 05										
4.	Tool to calculate the emission factor for an electricity system, Version 01										
5.	Participant list of on-site interview, signed on May.14 th , 2008										
6.	On-site interviews at the project site in the office of Yunnan Dianneng Sinanjiang Hydropower Development Co., Ltd. of Mojiang Hanizu Autonomous County, Puer City, Yunnan Province, China, conducted on May.14th, 2008 by auditing team of TÜV SÜD. Validation team: <table> <tr> <td>Mr. Jason Wu</td><td>CDM Auditor, TÜV SÜD China Guangzhou Branch</td></tr> <tr> <td>Mr. Riccardo Arena</td><td>CDM Trainee Auditor, TÜV Italia - TÜV SÜD Group</td></tr> </table> Interviewed persons: <table> <tr> <td>Mr. Hongfei Ruan</td><td>Statistic Specialist, Yunnan Dianneng Sinanjiang Hydropower Development Co., Ltd.</td></tr> <tr> <td>Mr. Jianguo Liang</td><td>Planning & Contracting Officer, Yunnan Dianneng Sinanjiang Hydropower Development Co., Ltd.</td></tr> <tr> <td>Mr. Hengzhe Cai</td><td>Consultant, Coway International TechTrans Co., Ltd</td></tr> </table>	Mr. Jason Wu	CDM Auditor, TÜV SÜD China Guangzhou Branch	Mr. Riccardo Arena	CDM Trainee Auditor, TÜV Italia - TÜV SÜD Group	Mr. Hongfei Ruan	Statistic Specialist, Yunnan Dianneng Sinanjiang Hydropower Development Co., Ltd.	Mr. Jianguo Liang	Planning & Contracting Officer, Yunnan Dianneng Sinanjiang Hydropower Development Co., Ltd.	Mr. Hengzhe Cai	Consultant, Coway International TechTrans Co., Ltd
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Mr. Hengzhe Cai	Consultant, Coway International TechTrans Co., Ltd										
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8.	Approval of the Feasibility Study Report of Yunnan Sinanjiang Hydropower Project, Yunjijichu [2003]1118, issued by the Development and Planning Commission of Yunnan Province, dated Sep. 27 th , 2003										
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13.	The Purchasing Contract of the Turbine, Generator and Other Accessories, signed between Yunan Dianneng Economics and Trade Co., Ltd. and GE Asia Hydropower Equipments Co., Ltd, dated May 13 th , 2004										
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