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Validation Report

N.V. Nuon Energy Trade & Wholesale
VALIDATION OF THE CDM-PROJECT:
DATONG RIVER ZHUCHAXIA HYDROPOWER
STATION

REPORT NO. 1196685

2009, August 03

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

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Subject: Validation of a CDM Project			
Accredited TÜV SÜD Unit: TÜV SÜD 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: N.V. Nuon Energy Trade & Wholesale Spaklerweg 20 P.O. Box 41920 Amsterdam The Netherlands		Project Site(s): Datong River, Tibetan Autonomous County of Tianzhu, Gansu Province, China. GPS (dam): 102°35'32"E; 36°52'19"N GPS (powerhouse): 102°38'14"E; 36°51'12"N	
Project Title: Datong River Zhuchaxia Hydropower Station			
Applied Methodology / Version: ACM0002 / Version 07			Scope(s): 1 Technical Area(s): 1.1
First PDD Version: Date of issuance: 10-05-2008 Version No.: 01 Starting Date of GSP 27-05-2008		Final PDD version: Date of issuance: 03-08-2009 Version No.: 02	
Estimated Annual Emission Reduction:		121,617 tCO ₂ e	
Assessment Team Leader: Dr. Sven Kolmetz		Further Assessment Team Members: Charles Huang Carl Zhou Karin Wagner	
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 will recommend the project for registration by the CDM Executive Board in case 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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1 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 for the registration under the Clean Development Mechanism (CDM). Validation is part of the CDM project cycle and will finally result 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 at the CDM-EB and the Parties involved.

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

Datong River Zhuchaxia Hydropower Station

1.2 Scope

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

- The Kyoto Protocol, in particular § 12 and modalities and procedures for the CDM
- Decision 2/CMP1 and Decision 3/CMP.1 (Marrakech Accords)
- Further COP/MOP decisions with reference to the CDM (e.g. decisions 4 – 8/CMP.1)
- Decisions and specific guidance by the EB published under <http://cdm.unfccc.int>
- Guidelines for Completing the Project Design Document (CDM-PDD), and the Proposed New Baseline and Monitoring Methodology (CDM-NM)
- Baselines and monitoring methodologies (including GHG inventories)
- Management systems and auditing methods
- Environmental issues relevant to the sectoral scope applied for
- Applicable environmental and 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 forwards 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 for starting a 30 day global stakeholder consultation process (GSP). In case of any request a PDD might be revised (under certain conditions the GSP could be repeated) and the final PDD will form the basis for the final evaluation as presented in this report. Information on the first and the final PDD version is presented in page 1.

The only purpose of a validation is its use during the registration process as part of the CDM project cycle. Hence, 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 appointment of team covering the technical scope(s), sectoral scope(s), technical area(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 organises, details and clarifies the requirements a CDM project is expected to meet;

It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation and any adjustment made to the project design.

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

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

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>

2.1 Appointment of the Assessment Team

According to the technical scopes/areas 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) ensuring 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/technical area 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	☑	☑	☑
Charles Huang	GHG-A	☑		☑
Carl Zhou	GHG-A	☑		☑

Name	Qualification	Coverage of sectoral scope	Coverage of technical area	Host country experience
Karin Wagner	GHG-A	☒	☒	

Dr. Sven Kolmetz is physicist and head of the department "TÜV Carbon Management Service" located in the head office of TÜV SÜD Industrie Service GmbH in Munich, Germany. Furthermore he is officially authorized expert in the verification of GHG emissions in the framework of the European Emission Trading Scheme. Before entering TÜV SÜD he worked as energy consultant for industrial companies and as consultant for the German Federal Government on instruments for the reduction of GHG emissions.

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

Carl Zhou was an auditor for environmental management systems (according to ISO 14001) at Jiangsu TUV Product Service Ltd. He was based in Shenzhen. In his position he was responsible for the implementation of validation, verification and certifications audits for management systems. He has received training in the CDM validation process and participated already in several CDM project assessments.

Karin Wagner is an auditor in the "Carbon Management Service" department of TÜV SÜD Industrie Service GmbH in Munich, Germany. She holds a M.Sc. in geological sciences and has gathered experience in environmental consulting before joining TÜV SÜD. Karin Wagner specializes in the assessment of CDM / JI projects as well as voluntary standards in the sector of mining/mineral production, waste handling and disposal and renewable energies.

2.2 Review of Documents

A first version of the PDD was submitted to the DOE in May 2008. The first PDD version submitted by the PP and additional background documents related to the project design and baseline were reviewed to verify the correctness, credibility and interpretation of the presented information, furthermore a cross check between information provided and information from other sources have 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 June 24-26, 2008 TÜV SÜD performed interviews, telephone conferences and a physical site inspection with project stakeholders to confirm the relevant information and to resolve the issues identified in the first document review. The table below provides a list of all persons interviewed in this context.

Name	Organisation
Mr. Liu Yong	Project Vice Manager, GEPIC Darong Electric Power Company Ltd.
Mr. Liu Feng	Officer, GEPIC Darong Electric Power Company Ltd.
Mr. Li Jun	GEPIC Darong Electric Power Company Ltd., (safety and production dept.)
Mrs. Yang Niu	GEPIC Darong Electric Power Company Ltd.

Name	Organisation
Mr. Li Changfu	GEPIC Darong Electric Power Company Ltd., (coordinator for CDM)
Mrs. Wang Huan	DHV project manager
Mr. Hu Deli	Local villager
Mr. Xi Yuanshun	Local villager
Mr. Ma Yucheng	Project Vice Manager, GEPIC Darong Electric Power Company Ltd.
Miss Xing Xiaoyan	Project assistant, GEPIC Darong Electric Power Company Ltd.
Mr. Bao Cunsha	Local villager

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

The final PDD version that was submitted in August 2009 serves as the basis for the final assessment presented herewith. Changes are not considered to be significant with respect to the qualification of the project as a CDM project based on the two main objectives of the CDM, i.e. to achieve a reduction of anthropogenic GHG emissions and to contribute to a sustainable development.

2.6 Internal Quality Control

As final step of a validation the final documentation including the validation report and the protocol have to undergo an internal quality control by the CB "climate and energy", i.e. each report has to be finally approved either by the head of the CB or the deputy. In case one of these two persons is part of the assessment team approval can only be given by the other one.

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 GEPIC Darong Electric Power Company Ltd. of People's Republic of China and N.V. Nuon Energy Trade & Wholesale of the Netherlands. The host Party China and the participating Annex I Party, i.e. the Netherlands meet the requirements to participate in the CDM.

The DNA of China has issued a LoA (IRL 22) in June 2008 authorizing GEPIC Darong Electric Power Company Ltd. as a project participant. The DNA of the Netherlands has also issued a LoA (IRL 53) on 25 June 2008 authorizing N.V. Nuon Energy Trade & Wholesale 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 confirming 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 "Datong River Zhuchaxia Hydropower Station".

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

Both LoAs have been issued by the respective Party's DNA, National Development and Reform Commission of the People's Republic of China and Ministry of Housing, Spatial Planning and the Environment (Netherlands), respectively.

TÜV SÜD considers the requirements of the VVM (§§ 45-48) to be complied with.

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

3.2 Participation

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

The means of validation were equivalent to those described in section 3.1 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 most recent version of the guidelines for the completion of the PDD was followed. Relevant information was provided by the participants in the PDD sections. Completeness was assessed through the checklist included as Annex 1 of this report.

3.4 Project description

The following description of the project as per PDD could be verified during the on-site audit:

The project activity is a 34 MW hydro power project located in the central part of Gansu Province, with the water intake system located at the Datong River. The project activity is a run-of-river hydro power station, that consists of three turbines and generators sets (two HLA551-LJ-230 turbines and SF13.5-28/4870 generators of 13.5 MW each and one HLA551C-LJ-165 turbine and SF7000-20/3250 generator with 7 MW), thereby aggregating to the installed capacity of 34 MW. The generated electricity will be exported to the North-West China Power Grid (NWCPG), through the local grid.

The project activity is expected to have an annual power output of 143,300 MWh, with 143,113 MWh supplied to the grid. The difference between the total power generated and the net power supply of about 0.2% is due to the need of auxiliary power of the power plant.

The exported electricity from the project displaces the power generated by the existing power plants and likely capacity additions in the NWCPG, thereby resulting in an estimated emission reduction of 121,617 tCO₂e annually in the fixed 10-year crediting period.

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), cross check the same with other sources.
- An on-site visit has been performed and relevant stakeholder and personnel with knowledge of the project were interviewed, in case of doubt further cross checks through additional interviews have been done.
- Finally information related to similar projects or technologies as the CDM project activity have been used to confirm the accuracy and completeness of the project description.

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

3.5 Baseline and monitoring methodology

3.5.1 Applicability of the selected methodology

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

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

The Methodology specific protocol included to the Annex 1 documents the assessment process, including the steps taken. The results on the compliance check as well as the relevant evidence are explicitly presented 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 which are expected to contribute more than 1% of the overall expected average annual emissions reduction have not been identified.

3.5.2 Project boundary

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

As indicated in the methodology ACM0002 (Version 07), the spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to, which was correctly identified as the North-West China Power Grid. The only GHG and emission source included in the project boundary are the CO₂ emissions from the electricity generation in fossil fuel fired power plants that is displaced due to the project activity.

The most relevant documentation assessed in order to confirm the project boundary are following:

- Feasibility Study Report (FSR) (IRL 10), and
- Power Purchase Agreement (IRL 40), and
- Grid connection approval (IRL 14).

The same have been validated during the validation process using standard audit techniques, further details of any observation are transparently presented in the annex 1.

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

3.5.3 Baseline identification

In the PDD the following baseline scenario has been defined:

As per the ACM0002 (Version 07) methodology, the baseline is clearly defined for this type of project activity (i.e. installation of a new grid-connected renewable hydro power plant) which is as following.

Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations.

The information presented in the PDD has been validated by a first document review of all the data, further confirmation based on the on-site visit and a final step by cross checking the information with similar relevant projects and/or technologies. The sources referenced in the PDD have been quoted correctly. The information was cross-checked based on verifiable and credible sources, such as:

- Feasibility Study Report (FSR) (IRL 10), and
- Notice on Strictly Prohibiting the Installation of Fuel-fired Generators with the Capacity of 135 MW or below (IRL 25), and
- ACM0002 (Version 07).

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.

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

A verifiable description of the baseline scenario has been included to 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 and leakage and emission reductions. Corresponding calculations were carried out based on calculation spreadsheets. The parameters and equations presented in the PDD and further documentation 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 reviewed, further references and the result of the interviews.

The baseline methodology has been correctly applied following the requirements.

The estimated of the baseline emissions can be confirmed as the same 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 the 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 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 for 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. The new thermal capacity installation that exceeded 20% in the last years, for which data was available, was finally assessed with this factor.

The baseline calculation was based on the published OM/BM calculation process recently issued by the NDRC (China DNA). The values for the EF_{OM} and EF_{BM} were equal compared to the most recent values published by the Chinese DNA at the time of commencement of the validation of this project

and are therefore accepted for the calculation of the baseline emissions and the emission reductions. The same values were applied in the GSP-PDD.

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).

3.5.5 Project emissions

As indicated by the applied methodology, this type of project does not consider project emissions, since the minimum required power density is above the threshold.

3.5.6 Leakage

Not applicable as indicated by the applied methodology.

3.5.7 Emission Reductions

In summary, the calculation of the baseline emissions and the resulting overall emission reductions can be considered as correct.

3.6 Additionality

The additionality of the project has been presented in the PDD by applying the first, second and fourth step as indicated in the "Tool for the demonstration and assessment of additionality" (Version 5.2).

The approach used in the PDD was assessed first based on a document review, where following relevant documents have been reviewed:

- Feasibility Study Report (FSR) (IRL 10), and
- Investment analysis calculations (IRL 31).

On site, the additionality has been discussed principally with Mr. Liu Yong (Vice manager, GEPIC Darong Electric Power Company Ltd). Furthermore some documents have been reviewed on-site (for details see annex 2).

Finally the data, rationales, assumptions, justifications and documentation provided have been checked using local knowledge and sectoral and financial expertise, the same has been cross checked by:

- MoU for CDM development with Nuon and DHV (IRL 42, 43, 44), and
- Application and approval of CDM development by Gansu DRC (IRL 35 and 36), and
- Loan approval depends on CDM development (IRL 37).

Based on these validation steps, TÜV SÜD 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 was identified with the opening ceremony in April 2006 (IRL 7). This can be considered as appropriate, since any contracts for the construction and the equipment were signed at a later date.

In order to confirm this date the assessment team reviewed the following documents:

- Opening ceremony (IRL 7) in April 2006 published in the Gansu Daily Newspaper, and
- Construction contract (IRL 38), signed in May 2006, and

- Equipment purchase contracts (IRL 18, 39), which were signed in June and October 2006.

In addition, the assessment team cross checked this information with Mr. Liu Yong (GEPIC Darong Electric Power Company Ltd) during various discussions on site.

The starting date of the project activity is determined to be 13 April 2006 which is before 02 August 2008 and also before the GSP. The PPs presented the following documentation to the assessment team in order to demonstrate the early CDM consideration:

- Application and approval of CDM development from Gansu DRC (IRL 35, 36) in March 2006, and
- CDM development negotiations with DHV (IRL 44) in 2005, which clearly shows the early CDM consideration, and
- A letter from the bank issued in February 2006 (IRL 37), indicating that the loan will only be approved if the project is developed as a CDM project.

The original of the documentation presented was reviewed and cross checked based on the various interviews with Mr. Liu Yong (GEPIC Datong Electric Power Company Ltd), hence the documents can be considered appropriate to confirm the prior CDM consideration.

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
June 2006 CDM Development contract	Copy of signed contract (IRL 42)	This contract clearly indicates that CDM actions were on-going.
July 2006 Proposal from buyer	Copy of proposal (IRL 54)	Negotiations with Nuon as potential buyer clearly indicates on-going CDM actions.
January 2007 Issuance of PIN	Copy of PIN (IRL 57)	The publication of project idea notes clearly shows that the CDM development was on-going.
June 2007 Request and proposal for validation services with a DOE	Copy of proposal from SGS (IRL 46)	Search for DOE for validation services clearly indicates on-going CDM actions
July 2007 MoU	Copy of MoU (IRL 43)	Negotiations between PO and Nuon as the buyer clearly indicates on-going CDM –actions.
January 2008 ERPA	Copy of ERPA (IRL 45)	Signing of ERPA clearly indicates on-going CDM actions.
May 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.
2008-2009 On-going validation works	E-mails between Nuon and TÜV SÜD	On-going validation works clearly shows that the CDM development was also followed upon.

Hence 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 that is exported to the North-West China Power Grid.

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

3.6.3 Investment analysis

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

The parameters used in the financial calculations have been validated based on a review of the sources presented in the PDD, inter alia the Feasibility Study Report (FSR) (IRL 10) (investment costs, the O&M costs, annual power generation and supply, etc.). Since the tariff indicated in the FSR was simply calculated back in order to get a reasonable IRR, the tariff for the investment analysis in the PDD was derived from a public notice on the tariff (IRL 21).

These values were confirmed verbally during the site visit. Furthermore, the period of time between the finalization of the FSR and the investment decision is only three months therefore it can be confirmed that it is unlikely that the input values have materially changed. Furthermore based on a cross check with the following documents mentioned below, it can be seen that the parameters are plausible and can be considered acceptable under the project situation.

- Investment Plan (IRL 51), equipment invoices (IRL 23), and construction progress plans (IRL 48) as well as a financial audit report (IRL 52), confirming that the actual investment costs were slightly higher than those estimated in the FSR and applied in the investment analysis, and
- Public power price notices from 2004 and 2008 (IRL 21 and 41), as well as electricity invoices (IRL 50), confirming that the applied tariff of 0.227 RMB/kWh is plausible and valid, (even with the highest value available, i.e. the 0.2503 RMB/kWh indicated in the 2008 power price notice, the project IRR still remains below the benchmark and the project is still not financially attractive); and
- Power generation sheets (IRL 49), indicating that during the first year of operation (April 2008 – April 2009), less power has been generated than estimated in the FSR.
- Income and costs sheets for the station in 2008 (IRL 58), indicating that the O&M costs were slightly lower than the value applied for the IRR calculation, but still within an acceptable range (even with the lower value, the IRR would still remain below the benchmark, as indicated by the sensitivity analysis), and
- It could be verified that the plant load factor of 48% (or 4218 annual full load operation hours) was determined by Northwest Hydro Consulting Engineers (IRL 10), which is a third-party engineering company contracted by the project participant. Hence, TÜV SÜD confirms that the PLF has been defined correctly in the PDD (as per EB48, Annex 11) as well as the resulting input data applied for the IRR calculation.

Further on, TÜV SÜD would like to point out that the applied values including investment costs, the tariff as well as the O&M costs and the annual power generation are well within the typical range and were therefore also deemed to be appropriate by TÜV SÜD.

The benchmark used for the financial comparison has been obtained from “Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects” published by the Chinese State Power

Corporation (IRL 27). This value has been checked against the source and the suitability for this project can be confirmed as conservative based on TÜV SÜD's local and sectoral expertise.

Further assumptions presented in the financial analysis, inter alia lifetime and taxes have also been reviewed and were found appropriate based on the FSR and its approval (IRL 10, 11) as well as based on TÜV SÜD's local and sectoral expertise. Hence it can be confirmed that the underlying assumptions are appropriate for this project.

TÜV SÜD would also like to point out, that even with the total amount of power generated (i.e. 143,400 MWh) being applied for the investment analysis, the IRR remains below the benchmark and the project is still additional (i.e. the IRR is 5.55%).

The sensitivity analysis was analyzed 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 financial calculation has been completely checked, all the calculation files were checked and no mistakes have been found. Hence it can be confirmed that the calculations are correct.

3.6.4 Barrier analysis

Barrier analysis was not applied for this project.

3.6.5 Common practice analysis

The region for the common practice analysis has been defined as Gansu Province in Central China: The project activity's technology can be found in different country regions, where different situations can appear. Hence, the region has been defined taken into account the kind of technology and the industry type. The assessment team reviewed the approach presented in the PDD and can confirm that the relevant parameters as location, infrastructure, economical situation and development were taken into account in order to define the region to be used for the common practice based on TÜV SÜD's local and sectoral expertise. In summary, the presented region can be considered appropriate for the common practice analysis.

Further on, similar projects were considered as hydropower projects with a capacity between 17 MW and 51 MW and that were installed after 2002, i.e. after the Chinese Power Reform. TÜV SÜD considered the applied capacity range as reasonable, since it is well within the required range (i.e. 34 MW +/- 50%). The consideration of hydropower projects after 2002 is also deemed appropriate since the investment conditions significantly changed after this reform (IRL 9, 28, 29). In summary, TÜV SÜD considers the defined criteria for similar projects as plausible and appropriate.

The assessment team reviewed official sources such as the China Water Resources/Hydraulics Yearbooks (IRL 24, 30). This information confirms that the list of similar projects presented in the PDD is complete. In addition, the team made a further cross-check of the information based on the interviews.

All similar projects are also applying for CDM or are already registered as CDM projects. This could be confirmed by cross-checking with the UNFCCC webpage.

Hence 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 requirement of the methodology. The assessment team has checked all the parameters presented in the monitoring plan against the re-

quirements of the methodology; no deviations relevant for the project activity have been found in the plan.

The procedures have been revised by the assessment team through document review and interviews with the relevant personnel; this information together with the on-site inspection allows the assessment team to confirm that the proposed monitoring plan is feasible within the project design. The major parameters to be monitored have been discussed with the PPs especially regarding the location of the meters, the data management and in general the quality assurance and quality control procedures to be implemented in the context of the project.

The net power supplied to the NWCPG is measured by national standard electricity metering instruments that are calibrated annually. The meter is installed at the transformer sub-station. Cross-check meters are also in place at the outlet of the project site (one at each generator outlet, and one to measure the total electricity generated). All meters will have an accuracy of 0.2S. Cross-check measures include the comparison with the actual power sales receipts.

In summary, it is expected that the PPs 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 clearly presents a statement that the project contributes to the sustainable development of the host Party, i.e. People's Republic of China.

3.9 Local stakeholder consultation

The relevant local stakeholders have been invited via a newspaper announcement in the Gansu Daily, as well as online on the DHV webpage. The evidence of these invitations is IRL 19, 55 and 56. The assessment team reviewed the documentation in order to validate the inclusion of relevant stakeholders and using the local expertise, it can be confirmed that the communication method used to invite the stakeholders can be considered appropriate. The summary of comments presented in the PDD has been cross checked with the documentation of the stakeholders' consultation and is found to be complete.

The relevant comments presented by the local stakeholders have been taken due account by the PP, the same has been cross-checked with the information obtained during the interviews.

In summary, the local stakeholder consultation was adequately performed according to the CDM requirements.

3.10 Environmental impacts

The project participants ordered the Environmental Assessment Research Center of Lanzhou University to prepare an environmental impact assessment (EIA) for this project activity (IRL 12). The assessment team made a document review of the information presented. The IRL 13 (EIA approval by the local Environment Protection Bureau) confirms the correctness of the approach used by the PPs. Hence the PPs followed the requirements of the host country regarding the environmental impacts.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

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

The following table presents all key information on this process:

webpage: http://www.netinform.net/KE/Wegweiser/Guide2_1.aspx?ID=5187&Ebene1_ID=26&Ebene2_ID=1527&mode=1 http://cdm.unfccc.int/Projects/Validation/DB/4VIQUNOPERSUKXD8K134LZKE2K35MK/view.html	
Starting date of the global stakeholder consultation process: 2008-05-27	
Comment submitted by: -	Issues raised: none
Response by TÜV SÜD: -	

5 VALIDATION OPINION

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

Datong River Zhuchaxia Hydropower Station

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

The review of the project design documentation, the subsequent follow-up interviews and the further cross check 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. Hence 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 hence 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 and the engagement conditions detailed in this report. The validation has been performed following the VVM requirements. The only purpose of this report is its use during the registration process as part of the CDM project cycle. Hence, TÜV SÜD can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

Munich, 03-08-2009

Munich, 03-08-2009



Rachel Cuiyun Zhang
Certification Body "climate and energy"
TÜV SÜD Industrie Service GmbH



Dr. Sven Kolmetz
Assessment Team Leader

Validation of the CDM Project:
Datong River Zhuchaxia Hydropower Station



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Annex 1: Validation Protocol

Validation Protocol

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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. The proposed project's title is Datong River Zhuchaxia Hydro-power Station	☒	☒
A.1.2. Are there any indication concerning the revision number and the date of the revision?	1, 2	The available PDD is indicated as version 01 dated on May 1, 2008.	☒	☒
A.1.3. Is this consistent with the time line of the project's history?	1, 2	Yes. The same version was published for the GSP at the DOE's website www.netinform.net before the on-site audit. The period for comments is 27 May 08 - 25 Jun 08.	☒	☒
A.2. Description of the project activity				
A.2.1. Is the description delivering a transparent overview of the project activities?	1, 2	Yes. The proposed project activity is developed by GEPIC Darong Electric Power Company Ltd. And it is a run-of-river hydro-power project in Gansu Province, Total installed capacity of the Project will be 34MW, consisting of two 13.5MW and one 7 MW turbines. The project will generate annually 143,400 MWh and supply electricity to the Gansu Power Grid, finally to the Northwest China Power Grid. Corrective Action Request1: <u>1. Please indicate in A.2. the amount of electricity supplied to the grid and mention the reason(s) for the difference between annual generation and supply to the grid.</u> <u>2. Please include the following items in the description according to the new CDM-PDD guidelines (EB 41):</u> a) The scenario existing prior to the start of the implementation of	CAR1	☒

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		the project activity should be described (in the project case it should be the same as the baseline scenario). Please state that the scenario existing prior to the start of the implementation of the project activity is the same as the baseline scenario. b) Please make reference to the scenario, emission sources and gases described in A.4.3. and B.3. of the PDD. This should include amongst others information about the run-of-river reservoir.		
A.2.2. What proofs are available demonstrating that the project description is in compliance with the actual situation or planning?	1, 2, 9, 10, 11, 12, 13, 14, 18	The following data deliver evidences for the project activity: - Purchasing contracts of turbines and generators (No. 18 of IRL) - Feasibility Study Report and its approval (No. 10, 11 of IRL) - Environmental Impact Assessment (approved by the EPB) (No. 12, 13 of IRL) - Approval of the project confirmation (No. 9 of IRL) - Approval of connection to grid with Guizhou power company (No. 14 of IRL)	☒	☒
A.2.3. Is the information provided by these proofs consistent with the information provided by the PDD?	1, 2, 18	During the on site audit, the audit team reviewed these proofs provided by the project owner. Corrective Action Request2: According to the purchasing contract, the types of both generation and turbine units devices are inconsistent with the description in the PDD (Table in A.4.3.1.). Please revise this issue.	CAR 2	☒
A.2.4. Is all information presented consistent with details provided by further chapters of the PDD?	1, 2	Corrective Action Request3: The first crediting period is presented in the section A.2, obviously that is in contradiction with section C.2.2 where the fixed crediting period of max.10 years is chosen as crediting period, please re-	CAR 3	☒

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		solve this contradiction.		
A.3. Project participants				
A.3.1. Is the form required for the indication of project participants correctly applied?	1, 2	The form is correctly applied. In Table A.3-1 and Annex 1 of the PDD the two parties which are involved in the project activity, are indicated. Corrective Action Request4: Please still add the following paragraph below Table A.3.1.: (*) In accordance with the CDM modalities and procedures, at the time of making the CDM-PDD public at the stage of validation, a Party involved may or may not have provided its approval. At the time of requesting registration, the approval by the Party(ies) involved is required.	CAR4	☒
A.3.2. Is the participation of the listed entities or Parties confirmed by each one of them?	1, 2	The PPs include GEPIC Darong Electric Power Company Ltd (the project owner) and N.V. Nuon Energy Trade & Wholesale(the buyer) Open Issue: Pls. deliver the LoA issued by China and the DNA of the investment party, as well as the MoC countersigned by both parties to the DOE before submitting the request for registration.	Open Issue	☒
A.3.3. Is all information on participants / Parties provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	1, 2	Yes. The main information provided here is consistent with details provided in annex 1. Corrective Action Request5: Regarding the Chinese PP: A.3. mentions "Company Ltd.", whereas Annex 1 states "Limited Company". Please be consistent.	CAR5	☒
A.4. Technical description of the project activity				
A.4.1. Location of the project activity				

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
A.4.1.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	1,2	The proposed project activity is located in the Tibetan Autonomous County of Tianzhu, 200km from Lanzhou city, Gansu Province, People's Republic of China at the lower reaches of the Datong River. Corrective Action Request6: The information provided on the location of the project activity doesn't allow for a clear identification of the site, please submit the GPS coordinates of the power house and dam with degree, minute and second format.	CAR6	☒
A.4.1.2. How is it ensured and/or demonstrated, that the project proponents can implement the project at this site (ownership, licenses, contracts etc.)?	1,2	The project was approved by the local Development and Reform Commission and the EIA of the proposed project was approved by the local Environmental Protection Bureau.	☒	☒
A.4.2. Category(ies) of project activity				
A.4.2.1. To which category(ies) does the project activity belonging to? Is the category correctly identified and indicated?	1,2	Yes, the project falls into scope 1, Energy industries (renewable/non-renewable sources) as it deals with energy generation.	☒	☒
A.4.3. Technology to be employed by the project activity				
A.4.3.1. Does the technical design of the project activity reflect current good practices?	1,2	Yes, the project design reflects the current good practices based on the description in the feasibility study report and the investigation on site.	☒	☒
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. The total installed capacity is 34MW. There is no doubt that this technology will reduce the GHG emissions significantly. See CAR1	See-CAR1	
A.4.3.3. Does the implementation of the project activity require any technology transfer from annex-I-countries to the host country(ies)?	1,2	No, it doesn't. There is no technology transfer from annex-I countries to China by the proposed project.	☒	☒

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
A.4.3.4. Is the technology implemented by the project activity environmentally safe?	1,2	Yes. As the project uses similar hydropower technology as already successfully applied in other hydro power projects, 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	The difference between annual power generation and electricity supplied to the grid should be explained. See A.2.1. Corrective Action Request7: Please provide the following information in A.4.3. according to the revised CDM-PDD guidelines (EB 41): 1. The scenario existing prior to the start of the implementation of the project activity should be in detail described (in the proposed project case it should be the same as the baseline scenario). Please state that the scenario existing prior to the start of the implementation of the project activity is the same as the baseline scenario. 2. Please include in the equipment description information about: a) average lifetime of the equipment (turbines, generators, meters) based on manufacturer's specifications and industry standards b) load factor and efficiencies c) information about meters and their location in the system 3. Please include emissions sources and greenhouse gases involved in the project activity, according to the methodology. 4. Please provide information how the electricity would have been supplied to the grid in the absence of the proposed project activity. Corrective Action Request8: <u>Information about "expected annual power supply to the grid (MWh) in Table A.4.3.1. is not correct and should be revised.</u>	see CAR1 CAR7 CAR8	☒

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
A.4.3.6. Does the project use state of the art technology and / or does the technology result in a significantly better performance than any commonly used technologies in the host country?	1,2	Because the technology of installing a new hydropower plant has been fully developed and successfully implemented over China for decades, the technology applied in the proposed project is not different compared to that of other similar hydropower plants.	☒	☒
A.4.3.7. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1,2	It is not expected that there will be a substitution because the project started operation in June 2008. The life time of the project is under normal circumstances longer than the crediting period	☒	☒
A.4.3.8. Does the project require extensive initial training and maintenance efforts in order to be carried out as scheduled during the project period?	1,2	With relevance to the CDM monitoring, a monitoring officer will receive training on the monitoring methodologies, procedures and archiving. Then, the monitoring officer will train the project staff in charge for CDM monitoring.	☒	☒
A.4.3.9. Is information available on the demand and requirements for training and maintenance?	1,2	The effort to train the employees initially and during the operation phase was described by the project owner during the on-site audit and the demand and requirements were defined in written form.	☒	☒
A.4.3.10. Is a schedule available for the implementation of the project and are there any risks for delays?	1,2	The planning schedule in the past and for the future was clearly described by the project owner during the on-site audit, and there are no any risks for delays based on the description of project owner and onsite investigation.	☒	☒
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 required for the indication of projected emission reductions is correctly applied.	☒	☒
A.4.4.2. Are the figures provided consistent with other data presented in the PDD?	1,2	Yes, they are. The yearly emission reduction is estimated to amount 121,617tCO ₂ e. The same figure is quoted throughout the PDD.	☒	☒

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A.4.5. Public funding of the project activity				
A.4.5.1. Is the information provided on public funding provided in compliance with the actual situation or planning as available by the project participants?	1,2	According to the statement in A.4.5. of the PDD there is no public funding for the project activity. By reviewing the financial documents on-site this statement could be verified.	☒	☒
A.4.5.2. Is all information provided consistent with the details given in remaining chapters of the PDD (in particular annex 2)?	1,2	Yes, it is consistent with the information provided in Annex 2.	☒	☒
B. Application of a baseline and monitoring methodology				
B.1. Title and reference of the approved baseline and monitoring methodology				
B.1.1. Are reference number, version number, and title of the baseline and monitoring methodology clearly indicated?	1,2,3	Yes, it is ACM0002/Version 07 along with the Tool for the Demonstration and Assessment of Additionality (version 4) and Tool to Calculate the Emission Factor for an Electricity System(version 1). The "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion" is not mentioned in B.1. of the PDD, even though ACM0002/version 07 refers to that tool. <u>Corrective Action Request9:</u> 1. Please mention the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion, version 2" in B.1. of the PDD. 2. Please update the Tool to calculate the emission factor for an electricity system to version 01.1.	CAR9	☒
B.1.2. Is the applied version the most recent one and / or is this version still applicable?	1,2,3	Version 7 of ACM0002: "Consolidated baseline methodology for grid-connected electricity generation from renewable source", and version 1 of Tool to Calculate the Emission Factor for an Electricity System are applied, and they are the most recent ones at the	☒	☒

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		time of uploading for GSP. Version 4 of “the Tool for the Demonstration and Assessment of Additionality” is applied. Even though it is not the most recent version anymore, it is still applicable.												
B.1.3. Does the methodology refer to the following tools with its latest approved versions: - Tool to calculate the emission factor for an electricity system - Tool for the demonstration and assessment of additionality - Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion	1, 2	See B.1.1.	See CAR9	☒										
B.2. Justification of the choice of the methodology and why it is applicable to the project activity														
B.2.1. Is the applied methodology considered the most appropriate one?	1,2	Yes, the baseline and monitoring methodology ACM0002 version 7 is applicable to the proposed project, because the project meets all the applicability criteria stated in the methodology.	☒	☒										
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><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Evidences provided in the PDD?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table>	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													

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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 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.	1,2	<table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Evidences provided in the PDD?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> The proposed project activity results in new reservoirs and power density is greater than 4W/m2. Corrective Action Request10: Please mention in B.2. that the proposed project activity results in a <i>new run-of-river reservoir</i>.	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Evidences provided in the PDD?	Yes	Compliance verified?	Yes	CAR10	☑
Applicability checklist	Yes / No													
Criterion discussed in the PDD?	Yes													
Compliance provable?	Yes													
Evidences provided in the PDD?	Yes													
Compliance verified?	Yes													
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><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>N/A</td></tr><tr><td>Compliance provable?</td><td>N/A</td></tr><tr><td>Evidences provided in the PDD?</td><td>N/A</td></tr><tr><td>Compliance verified?</td><td>N/A</td></tr></table>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	N/A	Compliance provable?	N/A	Evidences provided in the PDD?	N/A	Compliance verified?	N/A	☑	☑
Applicability checklist	Yes / No													
Criterion discussed in the PDD?	N/A													
Compliance provable?	N/A													
Evidences provided in the PDD?	N/A													
Compliance verified?	N/A													
B.2.5. Criterion 4: Defined electricity grid boundaries	1,2	<table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Evidences provided in the PDD?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table>	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-	1,2	Not applicable.	☑	☑										

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD										
gies (if applied only)														
B.2.7. Criterion 6: Exclusion of fuel switching activities	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.2.8. Criterion 7: Exclusion of biomass fired power plants	1,2	<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>No</td></tr><tr><td>Compliance provable?</td><td>No</td></tr><tr><td>Evidences provided in the PDD?</td><td>No</td></tr><tr><td>Compliance verified?</td><td>No</td></tr></table> Corrective Action Request11: The exclusion of biomass fired power plants should be discussed in the PDD according to the methodology.	Applicability checklist	Yes / No	Criterion discussed in the PDD?	No	Compliance provable?	No	Evidences provided in the PDD?	No	Compliance verified?	No	CAR11	☒
Applicability checklist	Yes / No													
Criterion discussed in the PDD?	No													
Compliance provable?	No													
Evidences provided in the PDD?	No													
Compliance verified?	No													
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	<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.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	1,2	<table><tr><td>Boundary checklist</td><td>Yes / No</td></tr><tr><td>Source and gas(es) discussed by the PDD?</td><td>N/A</td></tr></table>	Boundary checklist	Yes / No	Source and gas(es) discussed by the PDD?	N/A	☒	☒						
Boundary checklist	Yes / No													
Source and gas(es) discussed by the PDD?	N/A													

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(geothermal power plants only) Gas(es): CO ₂ , CH ₄ Type: Project Emissions			<table><tr><td>Inclusion / exclusion justified?</td><td>N/A</td></tr><tr><td>Explanation / Justification sufficient?</td><td>N/A</td></tr><tr><td>Consistency with monitoring plan?</td><td>N/A</td></tr></table> The project consists of a grid-connected electricity generation from a hydropower station. Thus, B.3.1. is not applicable.		Inclusion / exclusion justified?	N/A	Explanation / Justification sufficient?	N/A	Consistency with monitoring plan?	N/A						
Inclusion / exclusion justified?	N/A															
Explanation / Justification sufficient?	N/A															
Consistency with monitoring plan?	N/A															
B.3.2.	Source: Emissions from combustion of fossil fuels required to operate the geothermal power plant (geothermal power plants only) Gas(es): CO ₂ Type: Project Emissions	1,2	<table><tr><td>Boundary checklist</td><td>Yes / No</td></tr><tr><td>Source and gas(es) discussed by the PDD?</td><td>N/A</td></tr><tr><td>Inclusion / exclusion justified?</td><td>N/A</td></tr><tr><td>Explanation / Justification sufficient?</td><td>N/A</td></tr><tr><td>Consistency with monitoring plan?</td><td>N/A</td></tr></table> The project consists of a grid-connected electricity generation from a hydropower station. Thus, B.3.2. is not applicable.		Boundary checklist	Yes / No	Source and gas(es) discussed by the PDD?	N/A	Inclusion / exclusion justified?	N/A	Explanation / Justification sufficient?	N/A	Consistency with monitoring plan?	N/A	☒	☒
Boundary checklist	Yes / No															
Source and gas(es) discussed by the PDD?	N/A															
Inclusion / exclusion justified?	N/A															
Explanation / Justification sufficient?	N/A															
Consistency with monitoring plan?	N/A															
B.3.3.	Source: Emissions from the reservoir (hydro power plants only) Gas(es): , CH ₄ Type: Project Emissions	1,2	<table><tr><td>Boundary checklist</td><td>Yes / No</td></tr><tr><td>Source and gas(es) discussed by the PDD?</td><td>Yes</td></tr><tr><td>Inclusion / exclusion justified?</td><td>Yes</td></tr><tr><td>Explanation / Justification sufficient?</td><td>Yes</td></tr><tr><td>Consistency with monitoring plan?</td><td>Yes</td></tr></table> The power density of proposed project is greater than 10W/m2, thus emissions from the reservoir may be excluded.		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	☒	☒
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	<table><tr><td>Boundary checklist</td><td>Yes / No</td></tr><tr><td>Source and gas(es) discussed by the PDD?</td><td>Yes</td></tr><tr><td>Inclusion / exclusion justified?</td><td>Yes</td></tr><tr><td>Explanation / Justification sufficient?</td><td>Yes</td></tr><tr><td>Consistency with monitoring plan?</td><td>Yes</td></tr></table>		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	☒	☒
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															

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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	<table><tr><td>Boundary checklist</td><td>Yes / No</td></tr><tr><td>Source and gas(es) discussed by the PDD?</td><td>Yes</td></tr><tr><td>Inclusion / exclusion justified?</td><td>Yes</td></tr><tr><td>Explanation / Justification sufficient?</td><td>Yes</td></tr><tr><td>Consistency with monitoring plan?</td><td>Yes</td></tr></table>	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	☒	☒
Boundary checklist	Yes / No													
Source and gas(es) discussed by the PDD?	Yes													
Inclusion / exclusion justified?	Yes													
Explanation / Justification sufficient?	Yes													
Consistency with monitoring plan?	Yes													
B.3.6. Source: Emissions from electricity generation in fossil fuel fired power plants of imported electricity (project electricity consumption) Gas(es): CO ₂	1,2	<table><tr><td>Boundary checklist</td><td>Yes / No</td></tr><tr><td>Source and gas(es) discussed by the PDD?</td><td>No</td></tr><tr><td>Inclusion / exclusion justified?</td><td>No</td></tr><tr><td>Explanation / Justification sufficient?</td><td>No</td></tr><tr><td>Consistency with monitoring plan?</td><td>No</td></tr></table> There are no imports from other power grids. Thus B.3.6 is not applicable.	Boundary checklist	Yes / No	Source and gas(es) discussed by the PDD?	No	Inclusion / exclusion justified?	No	Explanation / Justification sufficient?	No	Consistency with monitoring plan?	No	☒	☒
Boundary checklist	Yes / No													
Source and gas(es) discussed by the PDD?	No													
Inclusion / exclusion justified?	No													
Explanation / Justification sufficient?	No													
Consistency with monitoring plan?	No													
B.3.7. Do the spatial and technological boundaries as verified on-site comply with the discussion provided by the PDD?	1,2	Yes. The project boundary for the proposed project is represented by the Northwest China Power Grid. The Northwest China Grid is a larger regional grid, which consists of five sub-grids: Shaanxi Province, Gansu Province, Qinghai Province, Ningxia Autonomous Region and Xinjiang Autonomous Region. Furthermore the project boundary includes the project site. However, the requirements according to the new CDM-PDD guidelines (EB 41) are not considered yet. Corrective Action Request12: Please present a flow diagram of the project boundary, physically delineating the project activity, including all the equipments, systems and flows of energy. Please include in the diagram the emis-	CAR12	☒										

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		sion sources and gases included in the project boundary and the monitoring variables.		
B.4. Description of how the baseline scenario is identified and description of the identified baseline scenario				
B.4.1. Is it clearly described that the baseline is represented by the combined margin of the grid the activity will be connected to?	1,2	Yes, the baseline is represented by the combined margin of the grid the activity will be connected to. It is the equivalent annually generated electricity supplied by the Northwest China Power Grid. Corrective Action Request13: ● The project's IRR without CDM revenues in the section B.4 is 4.37%, but it is 5.52% in the section B.5 of the PDD, please resolve the inconsistency. ● Some words in the footnote 1 are wrongly spelled, please correct it. ● The rate of VAT are different between project Tianwanggou and the project Zhucaixia..	CAR13	☒
B.4.2. In case of any modification or retrofit of existing facilities: Is data available to determine the historic production level?	1,2	N/A	☒	☒
B.4.3. In case of any modification or retrofit of existing facilities: Have conservative assumptions been applied in order to estimate the point in time when the existing equipment needs to be replaced?	1,2	N/A	☒	☒
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	Not applicable.	☒	☒

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B.4.5.	Has the baseline been updated with new data?	1,2	Not applicable.	☒	☒
B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity (assessment and demonstration of additionality):					
B.5.1.	In case the project activity started before the validation activity, how is demonstrated that the CDM was seriously taken into account for the decision to start the project?	1,2	The project already started before the validation activity based on onsite investigation. Corrective Action Request14: The time schedule of the project implementation should be included in the B.5.1 of the PDD. This time schedule should include, where applicable, the date when the investment decision was made, the date when construction works started, the date when commissioning started and events and actions that evidence how CDM was considered in the decision to proceed with the proposed project activity. <u>Clarification Requests 1.</u> Please deliver the evidences that demonstrate that the CDM was seriously taken into account for the decision to start the project to the DOE.	CAR 14 CR 1	☒
Step 1					
B.5.2.	Are alternative scenarios defined that provide outputs or services comparable with the proposed CDM project activity?	1,2	Yes, the defined alternative scenarios provide outputs that are comparable with this project activity.	☒	☒
B.5.3.	Can be the list of alternatives considered to be complete, why? Is the scenario project activity without being registered as CDM project included?	1,2	The list can be considered complete, and the proposed project scenario without CDM is included as an alternative.	☒	☒

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B.5.4.	In case several different facilities, technologies, outputs or services are present in the project, are separately alternative scenarios for each of them included? Have realistic combinations been considered as project scenario?	1,2	Not applicable.	☒	☒
B.5.5.	Describe why the alternative scenarios are credible and realistic?	1,2	All alternatives are common in China. Therefore, they can be considered as plausible and realistic	☒	☒
B.5.6.	Do the alternative scenarios comply with mandatory laws and regulations?	1,2	Only alternative scenario i, iii and iv do comply with the laws and regulations of China	☒	☒
B.5.7.	If an scenario does not comply with the mandatory laws and regulations, it is clearly demonstrate that the law and/or regulation is systematically not enforced in the country?	1,2	All the laws quoted in the PDD are enforced in this project; hence, this section is not applicable.	☒	☒
Step 2 (could be optional if step 3 is used)					
B.5.8.	Is the analysis method identified appropriately?	1,2	3 analysis methods are provided according to the additionality tool. Because the proposed project generates economic benefits through the sales of electricity other than CDM revenue, therefore, the Option I (simple cost analysis) can't be taken. Moreover, the Option II (investment comparison analysis) only applies to projects where alternatives should be similar investment projects, however, in this case, the baseline scenario is the Northwest China Grid; hence, Option II can't be adopted either. It deems that Option III (benchmark analysis) is the only applicable one.	☒	☒
B.5.9.	In case of Option I (simple cost analysis): Is it demonstrated that the activity produces no economic benefits other than CDM income?	1,2	The simple cost analysis is not applicable for the proposed project because the project activity will produce economic benefit (from electricity sale) other than CERs income.	☒	☒

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B.5.10. In case of Option II (investment comparison analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?	1,2	Option III (benchmark analysis) is chosen for the investment analysis. So this section is not applicable.	☒	☒
B.5.11. In case of use of IRR, it is clearly demonstrated why is equity of project IRR used?	1,2, 27	The project IRR was used in the FSR and PDD.	☒	☒
B.5.12. 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, 27	Yes, the project IRR is selected as the most suitable financial indicator.	☒	☒
B.5.13. How is demonstrate that the benchmark represents standard returns in the market, considering the specific risk of the project type, but not linked to the subjective profitability The benchmark is to represent standard returns in the market, considering the specific risk of the project type, but not linked to the subjective profitability expectation or risk profile of a particular project developer?	1,2, 27	The benchmark IRR used in the PDD is 8%, and its source is Interim Rules on Economic Assessment of Electrical Engineering Retrofit issued by China Electric Power Press in 2003. <u>Clarification Requests 2.</u> 1) Please make an explanation in the PDD why this benchmark IRR document and benchmark IRR of 8% can be applied for the proposed project. 2) Please deliver this benchmark IRR document with translation to the DOE.	CR 2	☒
B.5.14. In case of company internal benchmark, is it clearly demonstrate that there is only one potential project developer and that the benchmark has been consistently used in the past?	1,2	The company internal benchmark is not applied, thus the section B.5.14 is not applicable.	☒	☒
B.5.15. 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	Corrective Action Request15: 1) The IRR presented in the feasibility study report is 8.0 %, but it is 5.52 % in the PDD, the difference to the FSR IRR should be	CAR 15 CR3	☒

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		justified in the PDD. 2) Please justify why the expected CERs price is 8 EUR/tCO₂e. 3) Some extra costs mentioned under Unforeseen Cost Increase were occurred after investment decision, but according to the EB 39, these costs can not be taken into account, please delete it. <u>Clarification Requests 3.</u> 1) The economic assessment presented in the feasibility study report should be provided in English and delivered to the DOE. 2) IRR calculation spreadsheet should be delivered to the DOE, and all data quoted in the sheet should be carefully checked with the data source. 3) The tariff document mentioned in the Table B.5-1 should be delivered to the DOE. 4) The PPA needs to be provided to the DOE. 5) As the project has been started to operate, the evidence of the real electricity tariff should be delivered to the DOE. 6) Is the VAT really 6% and not 17%? Please inform and if necessary revise.		
B.5.16. 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	Please see CAR 15 and CR 3	see CAR15 and CR 3	☒
B.5.17. Are all assumptions and input data clearly presented, documented, evidenced and consistent with the rest of the PDD?	1,2	Please see CAR 15 and CR 3	see CAR15 and CR 3	☒

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B.5.18. Does the sensitivity analysis shows that the conclusion is robust to reasonable variations in the critical assumptions?	1,2	Corrective Action Request16: Please include variation of electricity generation as parameter into sensitivity analysis.	CAR 16	☒
B.5.19. How is demonstrate that this variations have been adequately taken (range is adequate)?	1,2	Clarification Requests 4. Justification for the chosen range of the sensitivityanalysis should be explained in the PDD.	CR 4	☒
Step 3 (is mandatory if step 2 is not used or does not shows additionality)				
B.5.20. Is a complete list of barriers developed that prevent the different alternatives to occur?	1,2	Not applicable.	☒	☒
B.5.21. Is transparent and documented evidence provided on the existence and significance of these barriers?	1,2	Not applicable.	☒	☒
B.5.22. Is it transparently shown that the execution of at least one of the alternatives is not prevented by the identified barriers?	1,2	Not applicable.	☒	☒
B.5.23. How is confirmed that the CDM does alleviate the barriers presented?	1,2	Not applicable.	☒	☒
Step 4				
B.5.24. Have other activities in the host country / region similar to the project activity been identified and are these activities appropriately analyzed by the PDD?	1,2	Corrective Action Request17: 1) The justification for selected geographical boundary and capacity boundary should be provided in the PDD. 2) The latest version of Yearbook of China Water Resources should be applied. Clarification Requests 5. Reference documents and data sources for the common practice	CAR17 CR 5	☒

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		analysis should be delivered to the DOE.		
B.5.25. If similar activities are occurring: Is it demonstrated that in spite of these similarities the project activity would not be implemented without the CDM component (step 4b)?	1,2	See B.5.24, CAR 11 Clarification Request: It should be clarified why sub-step 4b) mentions “ most of medium scale hydropower projects of Gansu Province...”. All similar project activities mentioned in Table B.5.5. (beginning construction in 2002 or after) apply for CDM. Please clarify.	See CAR 17 CR5	☒
B.6. Emissions reductions				
B.6.1. Explanation of methodological choices				
B.6.1.1. Is it explained how the procedures provided in the methodology are applied by the proposed project activity?	1, 2, 3	The following steps are described in a transparent manner: -Step 1: calculation of emission reduction -Step 2: calculation of baseline emissions -Step 3: calculation of project emissions -Step 4: calculation of leakage emissions.	☒	☒
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, 3	Yes, every selection of options offered by the methodology is correctly justified and this justification is in line with the situation verified on-site.	☒	☒
B.6.1.3. Are the formulae required for the determination of project emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1, 2, 3	Not applicable The project activity is a hydropower project. Therefore, according to the ACM0002 methodology, greenhouse gas emissions from the project activity are zero, i.e. $PE_y = 0$.	☒	☒

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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, 3	Yes, see Equation in section B.6.1 of the PDD. $BE_y = EG_y \times EF_y$ Yes, the formulae are correctly presented.	☒	☒
B.6.1.5. Is the choice of options to determine the emissions factor (OM, BM) justified in a suitable and transparent manner?	1, 2, 3	Yes, the choice of options to determine the Emission Factor is fully justified in the PDD.	☒	☒
B.6.1.6. Are the six steps as defined per the "Tool for calculation of emission factor for electrical systems" correctly applied by the project participants?	1, 2, 3	Yes, the six steps are correctly applied.	☒	☒
B.6.1.7. In case of alternative weighing factors for the Combined Margin: Is the quantification of the alternative weighing factor justified in a suitable and transparent manner?	1, 2, 3	Not applicable. The default weights for hydro power projects in the 7 th version of ACM0002 (OM 0.5 and BM 0.5 respectively) are used.	☒	☒
B.6.1.8. In case of alternative weighing factors for the Combined Margin: Is the guidance for the PDD concerning the acceptability of alternative weights considered in the discussion?	1, 2, 3	Not applicable. See B.6.1.7.	☒	☒
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, 3	No leakage is necessary to be considered according to the methodology ACM0002, hence, $L_y=0$.	☒	☒
Tool to calculate project or leakage CO2 emissions from fossil fuel combustion				
B.6.1.10. Is the formula required for the determination of CO2 project emissions from fossil fuel combustion correctly presented,	1,2	Not applicable.	☒	☒

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enabling a complete identification of parameter to be used and / or monitored				
B.6.1.11. Is option A (preferred approach) or option B chosen for the determination of the CO2 emission coefficient COEF _{i,y} and is COEF _{i,y} correctly determined?	1,2	Not applicable.	☒	☒
B.6.1.12. Are formulae required for the determination of emission reductions correctly presented?	1,2	Yes, see Equation in the section B.6.1 of the PDD. $ER_y = BE_y - PE_y - L_y$	☒	☒
B.6.2. Data and parameters that are available at validation				
B.6.2.1. Is the list of parameters presented in chapter B.6.2 considered to be complete with regard to the requirements of the applied methodology?	1,2	Yes. A list of parameters is presented according to ACM0002.	☒	☒
B.6.2.2. Is the choice of ex-ante or ex-post vintage of OM and BM factors clearly specified in the PDD?	1,2	For the calculation of OM and BM factors, the ex-ante approach has been used.	☒	☒
Fill in the required amount of sub checklists for monitoring parameter and comment any line answered with "No"				
B.6.2.3. Parameter Title: GWP _{CH4} Global warming potential of methane valid for the relevant commitment period (tCO2/tCH4)	1,2	Data Checklist	Yes / No	☒
		Title in line with methodology?	N/A	
		Data unit correctly expressed?	N/A	
		Appropriate description of parameter?	N/A	
		Source clearly referenced?	N/A	
		Correct value provided?	N/A	
		Has this value been verified?	N/A	
		Choice of data correctly justified?	N/A	
		Measurement method correctly described?	N/A	

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B.6.2.4. Parameter Title: $EG_{\text{historical}}$ (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	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table> The project is a new hydropower plant, hence, this parameter is not applicable.	Data Checklist	Yes / No	Title in line with methodology?	N/A	Data unit correctly expressed?	N/A	Appropriate description?	N/A	Source clearly referenced?	N/A	Correct value provided?	N/A	Has this value been verified?	N/A	Choice of data correctly justified?	N/A	Measurement method correctly described?	N/A	☒	☒
Data Checklist	Yes / No																					
Title in line with methodology?	N/A																					
Data unit correctly expressed?	N/A																					
Appropriate description?	N/A																					
Source clearly referenced?	N/A																					
Correct value provided?	N/A																					
Has this value been verified?	N/A																					
Choice of data correctly justified?	N/A																					
Measurement method correctly described?	N/A																					
B.6.2.5. Parameter Title: $DATE_{\text{BaselineRetrofit}}$ (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	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table> The project is a new hydropower plant, hence, this parameter is not applicable.	Data Checklist	Yes / No	Title in line with methodology?	N/A	Data unit correctly expressed?	N/A	Appropriate description?	N/A	Source clearly referenced?	N/A	Correct value provided?	N/A	Has this value been verified?	N/A	Choice of data correctly justified?	N/A	Measurement method correctly described?	N/A	☒	☒
Data Checklist	Yes / No																					
Title in line with methodology?	N/A																					
Data unit correctly expressed?	N/A																					
Appropriate description?	N/A																					
Source clearly referenced?	N/A																					
Correct value provided?	N/A																					
Has this value been verified?	N/A																					
Choice of data correctly justified?	N/A																					
Measurement method correctly described?	N/A																					
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	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr></table>	Data Checklist	Yes / No	Title in line with methodology?	N/A	Data unit correctly expressed?	N/A	Appropriate description of parameter?	N/A	Source clearly referenced?	N/A	☒	☒								
Data Checklist	Yes / No																					
Title in line with methodology?	N/A																					
Data unit correctly expressed?	N/A																					
Appropriate description of parameter?	N/A																					
Source clearly referenced?	N/A																					

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		<table><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table>	Correct value provided?	N/A	Has this value been verified?	N/A	Choice of data correctly justified?	N/A	Measurement method correctly described?	N/A													
Correct value provided?	N/A																						
Has this value been verified?	N/A																						
Choice of data correctly justified?	N/A																						
Measurement method correctly described?	N/A																						
		The project is a new hydropower plant , and its power density is-greater than 10W/m2, hence, no project emission is considered according to the applied methodology, thus, this parameter is not applicable.																					
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	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table>	Data Checklist	Yes / No	Title in line with methodology?	N/A	Data unit correctly expressed?	N/A	Appropriate description of parameter?	N/A	Source clearly referenced?	N/A	Correct value provided?	N/A	Has this value been verified?	N/A	Choice of data correctly justified?	N/A	Measurement method correctly described?	N/A		☑	☑
Data Checklist	Yes / No																						
Title in line with methodology?	N/A																						
Data unit correctly expressed?	N/A																						
Appropriate description of parameter?	N/A																						
Source clearly referenced?	N/A																						
Correct value provided?	N/A																						
Has this value been verified?	N/A																						
Choice of data correctly justified?	N/A																						
Measurement method correctly described?	N/A																						
		The project is a new hydropower plant, hence, this parameter is not applicable.																					

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B.6.2.8. Parameter Title: A _{BL} (only applicable to hydropower plant projects with reservoir) Area of the reservoir measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m2). For new reservoirs, this value is zero (m ²).	1,2	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table> The project is a new hydropower plant with a new reservoir, hence, this parameter is not applicable.	Data Checklist	Yes / No	Title in line with methodology?	N/A	Data unit correctly expressed?	N/A	Appropriate description of parameter?	N/A	Source clearly referenced?	N/A	Correct value provided?	N/A	Has this value been verified?	N/A	Choice of data correctly justified?	N/A	Measurement method correctly described?	N/A	☒	☒
Data Checklist	Yes / No																					
Title in line with methodology?	N/A																					
Data unit correctly expressed?	N/A																					
Appropriate description of parameter?	N/A																					
Source clearly referenced?	N/A																					
Correct value provided?	N/A																					
Has this value been verified?	N/A																					
Choice of data correctly justified?	N/A																					
Measurement method correctly described?	N/A																					
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> Corrective Action Request18: This emissions factor should be included in the table in section B.6.2 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	CAR 18	☒
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></table>	Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	CAR 19	☒												
Data Checklist	Yes / No																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	Yes																					

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		<table><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> The simple OM method was chosen to calculate the OM. Corrective Action Request19: The OM factor should be included in the table in section B.6.2 of the PDD.	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									
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><td>Data Checklist</td><td>Yes / No</td></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> $EF_{BM,y}$ is calculated as the generation weighted average emission factor (measured in tCO2e/MWh) of a sample of m power plants. Corrective Action Request20: The BM factor should be included in the table in section B.6.2 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		CAR 20	☒
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.6.2.12. Parameter Title: $FC_{i,m,y}$, $FC_{i,y}$, $FC_{i,j,y}$, $FC_{i,k,y}$, $FC_{i,n,y}$ and $FC_{i,n,h}$	1,2	<table><tr><td>Data Checklist</td><td>Yes / No</td></tr></table>	Data Checklist	Yes / No		☒	☒																
Data Checklist	Yes / No																						

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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)		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.6.2.13. 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	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		
		Yes, the parameters are correctly described in PDD.			
B.6.2.14. Parameter Title: $EF_{CO2,i,y}$ and $EF_{CO2,m,i,y}$ CO2 emission factor of fossil fuel type i in year y (tCO2/GJ)	1,2	Data Checklist	Yes / No	☒	☒
		Title in line with methodology?	Yes		
		Data unit correctly expressed?	Yes		
		Appropriate description of parameter?	Yes		
		Source clearly referenced?	Yes		
		Correct value provided?	Yes		
		Has this value been verified?	Yes		
		Choice of data correctly justified?	Yes		

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		<table><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table>		Measurement method correctly described?	Yes																		
Measurement method correctly described?	Yes																						
B.6.2.15. Parameter Title: EG _{m,y} , EG _y , EG _{j,y} , EG _{k,y} and EG _{n,h} Net electricity generated and delivered to the grid by power plant / unit m,j,k or n (or in the project electricity system in case of EG _y) in year y or hour h (MWh)	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>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> Corrective Action Request21: Please revise the parameter title as according to the tool.		Data Checklist	Yes / No	Title in line with methodology?	No	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	CAR21	☑
Data Checklist	Yes / No																						
Title in line with methodology?	No																						
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.6.2.16. 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	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table>		Data Checklist	Yes / No	Title in line with methodology?	N/A	Data unit correctly expressed?	N/A	Appropriate description of parameter?	N/A	Source clearly referenced?	N/A	Correct value provided?	N/A	Has this value been verified?	N/A	Choice of data correctly justified?	N/A	Measurement method correctly described?	N/A	☑	☑
Data Checklist	Yes / No																						
Title in line with methodology?	N/A																						
Data unit correctly expressed?	N/A																						
Appropriate description of parameter?	N/A																						
Source clearly referenced?	N/A																						
Correct value provided?	N/A																						
Has this value been verified?	N/A																						
Choice of data correctly justified?	N/A																						
Measurement method correctly described?	N/A																						

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B.6.2.17. Parameter Title: $\eta_{m,y}$ Average net energy conversion efficiency of power unit m in year y	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>	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.6.2.18. Parameter Title: fraction of time with low costs /must run plant at the margin (for simple adjusted OM only)	1,2	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table>	Data Checklist	Yes / No	Title in line with methodology?	N/A	Data unit correctly expressed?	N/A	Appropriate description of parameter?	N/A	Source clearly referenced?	N/A	Correct value provided?	N/A	Has this value been verified?	N/A	Choice of data correctly justified?	N/A	Measurement method correctly described?	N/A	☒	☒
Data Checklist	Yes / No																					
Title in line with methodology?	N/A																					
Data unit correctly expressed?	N/A																					
Appropriate description of parameter?	N/A																					
Source clearly referenced?	N/A																					
Correct value provided?	N/A																					
Has this value been verified?	N/A																					
Choice of data correctly justified?	N/A																					
Measurement method correctly described?	N/A																					
B.6.3. Ex-ante calculation of emission reductions																						
B.6.3.1. Is the projection based on the same procedures as used for future monitoring?	1,2	Yes, it is.	☒	☒																		
B.6.3.2. Are the GHG calculations documented in a complete and transparent manner?	1,2	Yes, they are	☒	☒																		
B.6.3.3. Is the calculation of the operating margin and build margin emission factors documented electronically in a spreadsheet with the relevant information as defined per the “Tool for calculation of	1,2	Yes, it is documented electronically, but the spreadsheet has not been submitted to the validation team. Clarification Requests 6. Please deliver the spreadsheet of the emissions factor calculation	CR 6	☒																		

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emission factor for electrical systems"? Has this spreadsheet been submitted to the validation team?		(operating margin, build margin and combined margin) to the DOE.		
B.6.3.4. Is the data provided in this section consistent with data as presented in other chapters of the PDD?	1,2	Yes, it is.	☒	☒
B.6.4. Summary of the ex-ante estimation of emission reductions				
B.6.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	1,2	Yes, the project will result in fewer GHG emissions than the base-line scenario.	☒	☒
B.6.4.2. Is the form/table required for the indication of projected emission reductions correctly applied?	1,2	Yes, the form is correctly applied.	☒	☒
B.6.4.3. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	1,2	The life time of the project is expected to be 25 years and fixed crediting period of 10 is chosen. The yearly emission reduction and total emission reductions are indicated in B.6.4. of the PDD.	☒	☒
B.6.4.4. Is the data provided in this section in consistency with data as presented in other chapters of the PDD?	1,2	Yes. It is 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	Because the ex-ante approach for the calculation of the emissions factor is adopted, the parameters "net electricity fed to the grid", "surface area at full reservoir level", "installed capacity" and "total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads", are required to be monitored. The latter parameter is not mentioned in B.7.1. of the PDD yet.	See CAR23	☒

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		See B.7.1.3.																										
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	The parameter “Electricity supplied by the project activity to the grid, EGy” is indicated in B.7.1. of the PDD through the parameters EGout,y (electricity supplied to Northwest China Power Grid) and EGIN,y (electricity purchased from Northwest China Power Grid), thus the denomination of the two parameters is more accurate and is accepted. EGy is the difference between EGout,y and EGIN,y. <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>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>No</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table> Corrective Action Request22: 1) The indication of accuracy, reference to standard and calibration frequency should be provided. 2) EGout and EGIN presented in the column of comments should be EGout, y and EGIN,y respectively, and the same mistake is	Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	Yes	Has this value been verified?	Yes	Measurement method correctly described?	Yes	Correct reference to standards?	No	Indication of accuracy provided?	No	QA/QC procedures described?	Yes	QA/QC procedures appropriate?	Yes	CAR 22 CR 7	☒
Monitoring Checklist	Yes / No																											
Title in line with methodology?	Yes																											
Data unit correctly expressed?	Yes																											
Appropriate description of parameter?	Yes																											
Source clearly referenced?	Yes																											
Correct value provided for estimation?	Yes																											
Has this value been verified?	Yes																											
Measurement method correctly described?	Yes																											
Correct reference to standards?	No																											
Indication of accuracy provided?	No																											
QA/QC procedures described?	Yes																											
QA/QC procedures appropriate?	Yes																											

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		shown up in the section B.7.2, please correct it. 3) The data should be kept for at least 2 years after the end of the fixed crediting period, but not 2 years after the last crediting period or the proposed project activity, please correct it. Clarification Requests 7. It is not clear to the validation team why the electricity imported from the grid would be considered as project emissions when these emissions are equal to or more than 1% of baseline emissions, please clarify it. Please correct as well in B.7.2.																										
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>No</td></tr><tr><td>Data unit correctly expressed?</td><td>No</td></tr><tr><td>Appropriate description of parameter?</td><td>No</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>No</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> Corrective Action Request23: The parameter should be added to the table in section B.7.1 of the PDD.	Monitoring Checklist	Yes / No	Title in line with methodology?	No	Data unit correctly expressed?	No	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	CAR 23	☑
Monitoring Checklist	Yes / No																											
Title in line with methodology?	No																											
Data unit correctly expressed?	No																											
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																											

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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.	☒	☒
		Monitoring Checklist		
		Title in line with methodology?		
		Data unit correctly expressed?		
		Appropriate description of parameter?		
		Source clearly referenced?		
		Correct value provided for estimation?		
		Has this value been verified?		
		Measurement method correctly described?		
		Correct reference to standards?		
		Indication of accuracy provided?		
		QA/QC procedures described?		
		QA/QC procedures appropriate?		
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	☒	☒
		Title in line with methodology?		
		Data unit correctly expressed?		
		Appropriate description of parameter?		
		Source clearly referenced?		
		Correct value provided for estimation?		
		Has this value been verified?		
		Measurement method correctly described?		
		Correct reference to standards?		
		Indication of accuracy provided?		
		QA/QC procedures described?		
		QA/QC procedures appropriate?		

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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	<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>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table>	Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	Yes	Has this value been verified?	Yes	Measurement method correctly described?	Yes	Correct reference to standards?	Yes	Indication of accuracy provided?	Yes	QA/QC procedures described?	Yes	QA/QC procedures appropriate?	Yes	☒	☒
Monitoring Checklist	Yes / No																											
Title in line with methodology?	Yes																											
Data unit correctly expressed?	Yes																											
Appropriate description of parameter?	Yes																											
Source clearly referenced?	Yes																											
Correct value provided for estimation?	Yes																											
Has this value been verified?	Yes																											
Measurement method correctly described?	Yes																											
Correct reference to standards?	Yes																											
Indication of accuracy provided?	Yes																											
QA/QC procedures described?	Yes																											
QA/QC procedures appropriate?	Yes																											
B.7.1.7. Parameter Title: A _{PJ} (only applicable to hydropower plant projects with reservoir) Area of the reservoir measured in the surface of the water, after the implemenation of the project activity, when the reservoir is full (m ²).	1,2	<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>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table>	Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	Yes	Has this value been verified?	Yes	Measurement method correctly described?	Yes	Correct reference to standards?	Yes	Indication of accuracy provided?	Yes	QA/QC procedures described?	Yes	QA/QC procedures appropriate?	Yes	☒	☒
Monitoring Checklist	Yes / No																											
Title in line with methodology?	Yes																											
Data unit correctly expressed?	Yes																											
Appropriate description of parameter?	Yes																											
Source clearly referenced?	Yes																											
Correct value provided for estimation?	Yes																											
Has this value been verified?	Yes																											
Measurement method correctly described?	Yes																											
Correct reference to standards?	Yes																											
Indication of accuracy provided?	Yes																											
QA/QC procedures described?	Yes																											
QA/QC procedures appropriate?	Yes																											
B.7.1.8. Parameter Title: w _{Main,CO2}	1,2		☒	☒																								

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Average mass fraction of CO ₂ in the produced steam tCO ₂ /t steam (for geothermal projects only)		Monitoring Checklist	Yes / No		
		Title in line with methodology?	N/A		
		Data unit correctly expressed?	N/A		
		Appropriate description of parameter?	N/A		
		Source clearly referenced?	N/A		
		Correct value provided for estimation?	N/A		
		Has this value been verified?	N/A		
		Measurement method correctly described?	N/A		
		Correct reference to standards?	N/A		
		Indication of accuracy provided?	N/A		
		QA/QC procedures described?	N/A		
		QA/QC procedures appropriate?	N/A		
B.7.1.9. Parameter Title: w _{Main,CH₄} Average mass fraction of CH ₄ in the produced steam (tCH ₄ /t steam). for geothermal projects only)	1,2	Monitoring Checklist	Yes / No	☒	☒
		Title in line with methodology?	N/A		
		Data unit correctly expressed?	N/A		
		Appropriate description of parameter?	N/A		
		Source clearly referenced?	N/A		
		Correct value provided for estimation?	N/A		
		Has this value been verified?	N/A		
		Measurement method correctly described?	N/A		
		Correct reference to standards?	N/A		
		Indication of accuracy provided?	N/A		
		QA/QC procedures described?	N/A		
		QA/QC procedures appropriate?	N/A		
B.7.1.10. Parameter Title: M _{S,y} Quantity of steam produced during the	1,2	Monitoring Checklist	Yes / No	☒	☒

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year y. (for geothermal projects only)		Title in line with methodology?	N/A		
		Data unit correctly expressed?	N/A		
		Appropriate description of parameter?	N/A		
		Source clearly referenced?	N/A		
		Correct value provided for estimation?	N/A		
		Has this value been verified?	N/A		
		Measurement method correctly described?	N/A		
		Correct reference to standards?	N/A		
		Indication of accuracy provided?	N/A		
		QA/QC procedures described?	N/A		
		QA/QC procedures appropriate?	N/A		
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?	N/A		
		Data unit correctly expressed?	N/A		
		Appropriate description of parameter?	N/A		
		Source clearly referenced?	N/A		
		Correct value provided for estimation?	N/A		
		Has this value been verified?	N/A		
		Measurement method correctly described?	N/A		
		Correct reference to standards?	N/A		
		Indication of accuracy provided?	N/A		
		QA/QC procedures described?	N/A		
		QA/QC procedures appropriate?	N/A		
B.7.1.12. Parameter title: Weighted average mass fraction of carbon in fuel type i in year y	1,2	Monitoring Checklist	Yes / No	☒	☒
		Title in line with methodology?	N/A		
		Data unit correctly expressed?	N/A		

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

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		Correct reference to standards?	N/A																											
		Indication of accuracy provided?	N/A																											
		QA/QC procedures described?	N/A																											
		QA/QC procedures appropriate?	N/A																											
B.7.1.15. Parameter title: Weighted average CO2 emission factor of fuel type i in year y EF _{CO2,i,y}	1,2	<table><tr><td>Monitoring Checklist</td><td>Yes / No</td></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided for estimation?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr><tr><td>Correct reference to standards?</td><td>N/A</td></tr><tr><td>Indication of accuracy provided?</td><td>N/A</td></tr><tr><td>QA/QC procedures described?</td><td>N/A</td></tr><tr><td>QA/QC procedures appropriate?</td><td>N/A</td></tr></table>			Monitoring Checklist	Yes / No	Title in line with methodology?	N/A	Data unit correctly expressed?	N/A	Appropriate description of parameter?	N/A	Source clearly referenced?	N/A	Correct value provided for estimation?	N/A	Has this value been verified?	N/A	Measurement method correctly described?	N/A	Correct reference to standards?	N/A	Indication of accuracy provided?	N/A	QA/QC procedures described?	N/A	QA/QC procedures appropriate?	N/A	☒	☒
Monitoring Checklist	Yes / No																													
Title in line with methodology?	N/A																													
Data unit correctly expressed?	N/A																													
Appropriate description of parameter?	N/A																													
Source clearly referenced?	N/A																													
Correct value provided for estimation?	N/A																													
Has this value been verified?	N/A																													
Measurement method correctly described?	N/A																													
Correct reference to standards?	N/A																													
Indication of accuracy provided?	N/A																													
QA/QC procedures described?	N/A																													
QA/QC procedures appropriate?	N/A																													
B.7.2. Description of the monitoring plan																														
B.7.2.1. Is the operational and management structure clearly described and in compliance with the envisioned situation?	1,2	Yes, it is. See B.7.2 of the PDD. However, an organigram about the CDM management structure is not given in the PDD. Corrective Action Request24: Please provide an organigram about the CDM management structure in B.7.2. of the PDD.			CAR24	☒																								
B.7.2.2. Are responsibilities and institutional arrangements for data collection and archiving clearly provided?	1,2	Yes, the responsibilities and institutional arrangements for data collection and archiving are clearly provided. See B.7.2 of the PDD. However, see B.7.2.1.			See CAR24	☒																								
B.7.2.3. Does the monitoring plan provide current	1,2	Corrective Action Request25: 1. Chapter 7 in B.7.2. mentions that EGy is monitored in MWh and			CAR25	☒																								

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good monitoring practice?			shall be measured and recorded hourly and monthly. Besides it is stated, that net electricity exported to the grid shall be measured monthly. However, B.7.1. mentions EGy as a calculated parameter (difference between EGout,y and EGin,y). Please revise this inconsistency. 2. The equation in chapter 8 (B.7.2.) has to be revised, as the data units are not correct. 3. Please make clear in chapter 7 that electricity's data measurement is hourly and recording is monthly.		
B.7.2.4.	If applicable: Does annex 4 provide useful information enabling a better understanding of the envisioned monitoring provisions?	1,2	There is no additional information provided in the annex4.	☒	☒
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	Yes, the baseline determination is dated 20/12/2007 according to the PDD.	☒	☒
B.8.2.	Is this consistent with the time line of the PDD history?	1	Yes, it is. See also A.1.3.	☒	☒
B.8.3.	Is the information on the person(s) / entity(ies) responsible for the application of the baseline and monitoring methodology provided consistent with the actual situation?	1	Ms. MSc Ir. Malgorzata Sieniuc and Ms. Huan Wang determined the monitoring methodology.	☒	☒
B.8.4.	Is information provided whether this person / entity is also considered a project participant?	1	Corrective Action Request26: The information should be provided whether the persons mentioned in the B.8 of the PDD is also considered a project participant.	CAR 26	☒

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C. Duration of the project activity / crediting period				
C.1. Duration of the project activity				
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	1	The project's starting date is given as 13/04/2006 and the operational lifetime is expected to be 25 years. Clarification Requests 8. The evidence of the construction starting date should be delivered to the DOE. Corrective Action Request27: <u>According to the revised CDM-PDD guidelines (EB41), C.1.1. of the PDD should provide a description of how the project's starting date has been determined and a description of the evidence available to support this starting date.</u>	CR8 CAR27	☒
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	Fixed crediting period of max.10 years is chosen as the crediting period, and it is reasonable because the expected operational lifetime of the project activity is 25 years.	☒	☒
D. Environmental impacts				
D.1. Documentation on the analysis of the environmental impacts, including transboundary impacts				
D.1.1. Has the analysis of the environmental impacts of the project activity been sufficiently described?	1, 12 13	Yes, the environmental impacts of the project activity have been clearly described.	☒	☒

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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, 12 13	Yes, the EIA is a must in the P. R. China for new hydro power projects. The EIA of the proposed project was approved by the local Environment Protection Bureau	☒	☒
D.1.3.	Will the project create any adverse environmental effects?	1, 12 13	Referred to the EIA and the approval of EIA, the project will create very minor negative environmental impacts.	☒	☒
D.1.4.	Were transboundary environmental impacts identified in the analysis?	1, 12 13	There is no trans-boundary impact described in EIA report or approval of EIA. <u>Clarification Requests 9.</u> Please clarify in the PDD whether there are transboundary environmental impacts involved with the project activity.	CR 9	☒
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, 12 13	Refer to the EIA and the approval of EIA, there are no significant adverse environmental impacts from the project activity.	☒	☒
D.2.2.	Does the project comply with environmental legislation in the host country?	1, 12 13	Yes, the project is in conformity with the environmental legislation of the P. R. China and the EIA has been approved by the 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, 19	Yes, relevant stakeholders have been consulted in 2005 and September 2007.	☒	☒
E.1.2.	Have appropriate media been used to in-	1, 19	Yes. Questionnaires, newspaper as well as internet have been	CAR28	☒

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vite comments by local stakeholders?			used to invite comments by local stakeholders. Corrective Action Request28: Please describe in the PDD in more detail (please indicate at least the month) when the first survey was taken place to invite the comments by the local stakeholders.		
E.1.3.	If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	1, 19	There are no regulations/laws in China for carrying out the stakeholder consultation process for this project activity.	☒	☒
E.1.4.	Is the undertaken stakeholder process that was carried out described in a complete and transparent manner?	1, 19	Yes, the process is described in a complete and transparent manner.	☒	☒
E.2. Summary of the comments received					
E.2.1.	Is a summary of the stakeholder comments received provided?	1, 19	Yes, a summary of the stakeholder comments received was provided.	☒	☒
E.3. Report on how due account was taken of any comments received					
E.3.1.	Has due account been taken of any stakeholder comments received?	1, 19	Referring to the PDD and filled questionnaires which were gathered from participants and reviewed by the auditor on site, almost all stakeholder comments are positive	☒	☒
F. Annexes 1 – 4					
Annex 1: Contact Information					
F.1.1.	Is the information provided consistent with the one given under section A.3?	1	Yes, it is.	☒	☒

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F.1.2.	Is the information on all private participants and directly involved Parties presented?	1	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	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	N.A., see F.1.3.	☒	☒
Annex 3: Baseline information					
F.1.5.	If additional background information on baseline data is provided: Is this information consistent with data presented by other sections of the PDD?	1,2	Yes, the information is consistent with data presented by other sections of the PDD.	☒	☒
F.1.6.	Is the data provided verifiable? Has sufficient evidence been provided to the validation team?	1,2	Yes, the data provided is verifiable, and evidence has been provided to the validation team. However, the excel calculation sheet of the emissions factor calculation has not been submitted to the validation team yet. See B.6.3.3.	See CR6	☒
F.1.7.	Does the additional information substantiate / support statements given in other sections of the PDD?	1,2	Yes, it does.	☒	☒

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Annex 5: Monitoring information					
F.1.8.	If additional background information on monitoring is provided: Is this information consistent with data presented in other sections of the PDD?	1	No additional background information is provided.	☒	☒
F.1.9.	Is the information provided verifiable? Has sufficient evidence been provided to the validation team?	1	See F.1.8	☒	☒
F.1.10.	Do the additional information and / or documented procedures substantiate / support statements given in other sections of the PDD?	1	See F.1.8	☒	☒

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Table 2 Resolution of Corrective Action and Clarification Requests

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion								
Corrective Action Request1: <u>1. Please indicate in A.2. the amount of electricity supplied to the grid and mention the reason(s) for the difference between annual generation and supply to the grid.</u> 2. Please include the following items in the description according to the new CDM-PDD guidelines (EB 41): a) The scenario existing prior to the start of the implementation of the project activity should be described (in the project case it should be the same as the baseline scenario). Please state that the scenario existing prior to the start of the implementation of the project activity is the same as the baseline scenario. b) Please make reference to the scenario, emission sources and gases described in A.4.3. and B.3. of the PDD. This should include amongst others information about the run-of-river reservoir.	A.2.1	1. “supply 143,113 MWh (with Auxiliary Power Ratio 0.2%) electricity to the Gansu Power Grid” has been added in A.2.. 2. Texts added	☒ The difference between total and net power generation / supply is clearly stated in the revised PDD. The additional information required is also presented and the PDD is fully in line with the latest PDD guidelines.								
Corrective Action Request2: According to the purchasing contract, the types of both generation and turbine units devices are inconsistent with the description in the PDD (Table in A.4.3.1.). Please revise this issue.	A.2.3	The types of both generator and turbine units have been revised in the table A.3.1. <table><tr><td>Model of turbines</td><td>HLA551C-LJ-230</td></tr><tr><td></td><td>HLA551C-LJ-165</td></tr><tr><td>Model of generators</td><td>SF13.5-28/4870</td></tr><tr><td></td><td>SF7000-20/3250</td></tr></table>	Model of turbines	HLA551C-LJ-230		HLA551C-LJ-165	Model of generators	SF13.5-28/4870		SF7000-20/3250	☒ The indicated types and models of the equipment is now consistent.
Model of turbines	HLA551C-LJ-230										
	HLA551C-LJ-165										
Model of generators	SF13.5-28/4870										
	SF7000-20/3250										
Corrective Action Request3: The first crediting period is presented in the section A.2. obviously that is in contradiction with	A.2.4.	We have deleted the “first” to solve the contradiction.	☒ The PDD has been revised.								

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section C.2.2 where the fixed crediting period of max.10 years is chosen as crediting period, please resolve this contradiction.			
Corrective Action Request4: Please still add the following paragraph below Table A.3.1.: (*) In accordance with the CDM modalities and procedures, at the time of making the CDM-PDD public at the stage of validation, a Party involved may or may not have provided its approval. At the time of requesting registration, the approval by the Party(ies) involved is required.	A.3.1.	This paragraph has been added in the Table A.3.1.	☒ The missing information from the template has been added.
Corrective Action Request5: Regarding the Chinese PP: A.3. mentions "Company Ltd.", whereas Annex 1 states "Limited Company". Please be consistent.	A.3.3.	We modified the Annex 1 to keep consistent.	☒ Annex 1 and A.3 are now fully consistent.
Corrective Action Request6: The information provided on the location of the project activity doesn't allow for a clear identification of the site, please submit the GPS coordinates of the power house and dam with degree, minute and second format.	A.4.1.1.	The exact geographical coordinates of the proposed project have been added in section A.4.1.1. The geographical coordinates of the dam are 102°35'32" E and 36°52'19" N, and the geographical coordinates of the powerhouse are 102°38'14" E and 36°51'12" N.	☒ The GPS data was presented for the dam and the powerhouse separately. The data was further checked with Google Earth and found to be correct.
Corrective Action Request7: Please provide the following information in A.4.3. according to the revised CDM-PDD guidelines (EB 41): 1. The scenario existing prior to the start of the implementation of the project activity should be in detail described (in the proposed project case it should be the same as the baseline scenario). Please state that the scenario existing prior to the start of the implementation of the project activity	A.4.3.5.	CAR 7: texts added.	☒ The missing information was added.

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is the same as the baseline scenario. 2. Please include in the equipment description information about: a) average lifetime of the equipment (turbines, generators, meters) based on manufacturer's specifications and industry standards b) load factor and efficiencies c) information about meters and their location in the system 3. Please include emissions sources and greenhouse gases involved in the project activity, according to the methodology. 4. Please provide information how the electricity would have been supplied to the grid in the absence of the proposed project activity.			
Corrective Action Request8: <u>Information about "expected annual power supply to the grid (MWh) in Table A.4.3.1. is not correct and should be revised.</u>		Corrective 8: "expected annual power supply to the grid (MWh) have been revised.	☑ The missing information was added.
Corrective Action Request9: 1. Please mention the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion, version 2" in B.1. of the PDD. 2. Please update the Tool to calculate the emission factor for an electricity system to version 01.1.	B.1.1.	1. The "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion, version 2" have been added in B.1. of the PDD. 2. "Tool to calculate the emission factor for an electricity system" has been updated to version 01.1.	☑ The missing tools were added to the PDD.

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Corrective Action Request10: Please mention in B.2. that the proposed project activity results in a <i>new run-of-river reservoir</i> .	B.2.3.	“The project activity results in new reservoirs.” Has been added in section B.2.	☒ The missing information on the reservoir is now presented in the revised PDD. The value is above the threshold and no project emissions have to be considered.
Corrective Action Request11: The exclusion of biomass fired power plants should be discussed in the PDD according to the methodology.	B.2.8.	The exclusion of biomass fired power plants has been discussed in the PDD according to the methodology.	☒ The discussion of this applicability criteria has been added to the revised PDD.
Corrective Action Request12: Please present a flow diagram of the project boundary, physically delineating the project activity, including all the equipments, systems and flows of energy. Please include in the diagram the emission sources and gases included in the project boundary and the monitoring variables.	B.3.7.	A flow diagram of the project boundary, physically delineating the project activity, based on the descriptions provided in section “A.4.3, has been added in the section B.3.	☒ The flow diagram is added.
Corrective Action Request13: - The project’s IRR without CDM revenues in the section B.4 is 4.37%, but it is 5.52% in the section B.5 of the PDD, please resolve the inconsistency. - Some words in the footnote 1 are wrongly spelled, please correct it. The rate of VAT are different between project Tianwanggou and the project Zhucaixia..	B.4.1.	- The inconsistency has been solved. - The misspelled words have been corrected. - In fact, VAT is different in the FSRs of Tianwanggou and Zhuchaxia.	☒ The inconsistencies and typos were removed from the revised PDD.
Corrective Action Request14: The time schedule of the project implementation should be included in the B.5.1 of the PDD. This time schedule should include, where applicable, the date when the investment decision was	B.5.1.	First response: Time schedule and project milestone table has been added to B.5. Second response (wrt follow-up 1):	☒ Follow-up 1: Project starting date: the PDD indicates a project starting date of 13/04/2006, which is the day when construction started. However,

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made, the date when construction works started, the date when commissioning started and events and actions that evidence how CDM was considered in the decision to proceed with the proposed project activity.		-The earliest construction contract was signed on May 18, 2006. The starting date in the timeline is the time of the opening ceremony. In that day, the construction company had not been fixed yet, so no construction was started. The PO only wanted to use the ceremony to indicate its official beginning. At the same time, the opening date is good day on Chinese lunar calendar. We used this opening ceremony as the starting date for it was also listed on the Gansu Daily as the opening date. -Translation of the earliest contracts have been provided to DOE. - In Gansu it is not uncommon to start construction based on oral approval from the authorities. The official approval needs more time for processing. -The "first proposal from the buyer of the carbon credits" has been submitted to DOE. -other actions to secure the CDM between July 2006 and June 2007 had been submitted to DOE.	typically a contract is signed with the construction company prior to the date when the construction is started. Please clarify when this contract has been signed. In addition, a contract that indicates the earliest date of construction with May 2006 was provided as an evidence. Please explain how this fits into the timeline presented in the PDD (i.e. construction was started before a contract was signed?). In addition, please provide a translation of the provided "earliest contract of construction and generator". The FSR was approved in June 2006. Why was the construction started without any FSR approval? On-going CDM actions: Please provide us with a copy of the "first proposal from the buyer of the carbon credits". Please indicate any other actions that were taken to secure the CDM status between July 2006 and June 2007. Conclusion: The project starting date was conservatively identified. Any real actions, i.e. signing of any contracts happened at a later date. Additional CDM actions could be identified to confirm the on-going CDM development in parallel with the implementation of the hydrolant.
Corrective Action Request15: 1) The IRR presented in the feasibility	B.5.15.	1) The difference between IRRs in the FSR and PDD results from different tariffs used in both documents. In the FSR the tariff is RMB 0.2710 (incl.	☒ Follow-up 1:

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study report is 8.0 %, but it is 5.52 % in the PDD, the difference to the FSR IRR should be justified in the PDD. 2) Please justify why the expected CERs price is 8 EUR/tCO_{2e}. 3) Some extra costs mentioned under Unforeseen Cost Increase were occurred after investment decision, but according to the EB 39, these costs can not be taken into account, please delete it.		VAT) based on the back calculation in order to achieve an 8% IRR. While in the PDD, the IRR analysis based on the realistic tariff at the time of writing the FSR, which is RMB 0.227(incl. VAT). This tariff can be checked from the indicated reference. 2) The CER price and the impact of the CER revenue have been added as illustration only and do not form part of the additionality argument per se. The Additionality Tool does not require to demonstrate the financial impact of the CER revenue. The chosen price is the minimum price required by NDRC at the time of writing the PDD. 3) The extra cost have been deleted. Second response (wrt follow-up 1): -Auditing report and required translation of the contracts has been sent to DOE. -the money spent has been given to DOE. -translation of the PPA has been provided to DOE. On the Chapter 5 of PPA, only tariff in the period of commissioning test was listed, which was 0.07 RMB/kWh. It said tariff in the period of commercial operation should be evaluated according to relevant regulations and reported to department in charge of price. The tariff should be according to the approval document (which is "the tariff document of provincial Price Bureau" in this project) from that department in charge of price(which is Gansu Price Bureau in this project). -As you mentioned the real tariff document was only available till 2008, as per the EB guidance, we	Please provide a translation of the auditing report as well as the generator and construction contract signed in May and June 2006 (what are the names of the companies who signed this contract, etc.?). In addition, please explain how much money has been really spent on the project compared to the value estimated in the FSR. What tariff is indicated in the PPA? Please provide a translation. According to the 2008 electricity tariff document published by the Gansu Price Bureau, the tariff is slightly higher, why has this higher tariff not been adopted for this project? Conclusion: Cross-check documents were provided (for details see Annex 2).

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		have to use data available at the decision time.	
Corrective Action Request16: Please include variation of electricity generation as parameter into sensitivity analysis.	B.5.18.	Variation of electricity generation has been added as a parameter in the sensitivity analysis.	☒ The parameter has been added.
Corrective Action Request17: 1) The justification for selected geographical boundary and capacity boundary should be provided in the PDD. 2) The latest version of Yearbook of China Water Resources should be applied.	B.5.24.	First response: 1) The justification for selected geographical boundary and capacity boundary has been provided in the PDD. 2) In the latest version of the Yearbook of China Water Resources, there is not the same information of the hydropower plants in Gansu. We could not find the data of hydropower plants in other published documents either. So we have to use this old version as data source. Second response (wrt follow-up 1): According to Economic Evaluation Code for Small Hydropower Projects (SL16-95), hydropower plant, with capacity less than 25 MW is defined as small scale hydropower projects. Projects with capacity from 0.5 to 1.5 times of the proposed project are similar with the proposed project. Then we choose projects with 0.5 to 1.5 times capacity of proposed projects and non-small scale projects to make our common practice analysis. Then the capacity boundary is from 25MW to 51MW.	☒ Follow-up 1: Please explain why the similar scale was taken from 25MW – 51MW, as this is not the +/- 50% range as indicated. Conclusion: An adequate range was taken in the revised PDD for the common practice analysis.
Corrective Action Request18: This emissions factor should be included in the table in section B.6.2 of the PDD.	B.6.2.9.	First response: Added. Second response (wrt follow-up 1): Yes, we should base our data on the most recent	☒ Follow-up 1: Please explain why the emission factor values have been changed compared to the values that were adopted in the GSP PDD, and the

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		data available at the time of submission of the PDD to the DOE for validation. But we didn't adopt the most recent data, which has been published in Dec. 2007(China Electric Power Yearbook 2007) and in Mar. 2008 (China Energy Statistical Yearbook 2007), when we submit the PDD to DOE in May 2008. We realized this issue during the validation and updated the EF. As you know, Chinese DNA also used these data to calculate the EF too, but the its "China's Regional Grid Baseline Emission Factors 2008(Chinese Version)" was published on Jul.18, 2008. We only use the DNA's publication to revise and authorize our calculation. But our data base are still the two documents, which has been available before we submitted our PDD.	overall result, i.e. the EF-CM is higher. How can this be considered as conservative, and how is this in line with the latest guidance indicating that the values available at the commencement of the validation should be applied. Conclusion: The appropriate values have been adopted for the EF calculation.
Corrective Action Request19: The OM factor should be included in the table in section B.6.2 of the PDD.	B.6.2.10	This parameter has been added to the table in section B.6.2 of the PDD.	☒ See follow-up wrt CAR18.
Corrective Action Request20: The BM factor should be included in the table in section B.6.2 of the PDD.	B.6.2.11.	This parameter has been added to the table in section B.6.2 of the PDD.	☒ See follow-up wrt CAR18.
Corrective Action Request21: Please revise the parameter title as according to the tool.	B.6.2.15.	The title of the parameter has been revised.	☒ The parameters have been revised accordingly.
Corrective Action Request22: --The indication of accuracy, reference to standard and calibration frequency should be provided. --EGout and EGIN presented in the column of comments should be EGout, y and EGIN,y respectively, and the same mistake is shown up in the section B.7.2, please correct it.	B.7.1.2.	Follow-up 1: 1) The accuracy, reference to standard and calibration frequency has been further down indicated in section B.7.2. 2) Corrected 3) Corrected	☒ Follow-up 1: Please indicate the calibration frequency of the meters in the PDD. Conclusion: Accepted, meters will be calibrated annually.

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--The data should be kept for at least 2 years after the end of the fixed crediting period, but not 2 years after the last crediting period or the proposed project activity, please correct it.		Follow-up 2 (wrt follow-up 1): Calibration frequency has been added in the PDD.	
Corrective Action Request23: The parameter should be added to the table in section B.7.1 of the PDD.	B.7.1.3.	The parameter have been added to the table in section B.7.1 of the PDD.	☑ The parameters have been added accordingly.
Corrective Action Request24: Please provide an organigram about the CDM management structure in B.7.2. of the PDD.	B.7.2.1.	"Figure B.7.2-1 Management structure for monitoring' have been added to show the CDM management structure in B.7.2.	☑ The management structure has been explained clearly.
Corrective Action Request25: 1. Chapter 7 in B.7.2. mentions that EGy is monitored in MWh and shall be measured and recorded hourly and monthly. Besides it is stated, that net electricity exported to the grid shall be measured monthly. However, B.7.1. mentions EGy as a calculated parameter (difference between EGout,y and EGIN,y). Please revise this inconsistency. 2. The equation in chapter 8 (B.7.2.) has to be revised, as the data units are not correct. 3. Please make clear in chapter 7 that electricity's data measurement is hourly and recording is monthly.	B.7.2.3.	1. the inconsistency has been solved. 2. the equation has been corrected. 3. "be measured continuously and recorded on a monthly basis" is added to the PDD.	☑ The inconsistencies have been revised. The power is measured continuously and recorded on a monthly basis.
Corrective Action Request26: The information should be provided whether the persons mentioned in the B.8 of the PDD is also considered a project participant.	B.8.4.	"The person/entity is not project participant listed in Annex 1." Has been added to this section.	☑ Section B.8 is now complete and correct.
Corrective Action Request27: According to the revised CDM-PDD guidelines (EB41), C.1.1. of the PDD should provide a de-	C.1.1.	The description of how the project's starting date has been determined and a description of the evidence available to support this starting date have	☑ See follow-up discussions in B.5.

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scription of how the project's starting date has been determined and a description of the evidence available to support this starting date.		been added in the Section C.1.1.	
Corrective Action Request28: Please describe in the PDD in more detail (please indicate at least the month) when the first survey was taken place to invite the comments by the local stakeholders.	E.1.2.	First response: More details of the first survey was described in section E.1. Second response (wrt follow-up 1): Corrected. The first consultation took place in 2006.	☒ Follow-up 1: In section E, it is indicated that the first one took place in 2005, with the focus on the environmental impacts. However, section E.1 indicates that the first consultation took place in March 2006. Please clarify. Conclusion: The inconsistency was revised in the latest PDD.
<u>CRs</u>			
Clarification Request 1 Please deliver the evidences that demonstrate that the CDM was seriously taken into account for the decision to start the project to the DOE.	B.5.1.	The evidence as follows have be delivered to DOE : 1) Loan Intent Letter on the Datong River Zhuchaxia Hydropower Station Project 2) The Referendum on the Application of CDM Development of Zhuchaxia Hydropower Station 3) The approval on application of the CDM development of Zhuchaxia hydropower station by Gansu DRC. 4) Minutes of the monthly meeting of the company, GEPIC Darong Electric Power Company	☒ See follow-up discussions in B.5.
Clarification Request 2 --Please make an explanation in the PDD why this benchmark IRR document and benchmark IRR of 8% can be applied for the proposed project.	B.5.13	1) With reference to <i>Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects</i> , the benchmark of the China Power Industries is to be 8% of the total investment. 8% as the benchmark for the total investment has been the common practice in the China Power Industry. Be-	☒ The document has been provided (see Annex 2). The application of this benchmark is considered as appropriate by TÜV SÜD.

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--Please deliver this benchmark IRR document with translation to the DOE.		sides, the <i>Economic Evaluation Method and Parameters for Construction Projects</i> as a reference for the <i>Feasibility Study Report of Zhuchaxia hydropower engineering</i> , also define 8% as the benchmark for the hydropower project. The proposed project is a newly built hydropower project, so it also adopts 8% as the benchmark for total investment IRR. 2) Benchmark IRR document have been delivered to the DOE	
Clarification Request 3 --The economic assessment presented in the feasibility study report should be provided in English and delivered to the DOE. --IRR calculation spreadsheet should be delivered to the DOE, and all data quoted in the sheet should be carefully checked with the data source. --The tariff document mentioned in the Table B.5-1 should be delivered to the DOE. --The PPA needs to be provided to the DOE. --As the project has been started to operate, the evidence of the real electricity tariff should be delivered to the DOE. --Is the VAT really 6% and not 17%? Please inform and if necessary revise.	B.5.15.	1) The economic assessment has been provided to DOE 2) IRR calculation spreadsheet has been delivered to the DOE, and all data quoted in the sheet have been carefully checked with the data source. 3) the tariff document have been delivered to DOE 4) the PPA has been delivered to DOE 5) the real electricity tariff has been delivered to DOE 6) the real VAT of Zhuchaxia is 17%.	☒ See follow-up discussions in B.5.
Clarification Request 4 Justification for the chosen range of the sensitivity analysis should be explained in the PDD.	B.5.19.	The 10% variation rang is common rule in the sensitivity analysis and is used in the FSR of the project. On the other hand, the financial plan will be carried out within 3 years, and the variation will be limited within these years. If we assume that the	☒ The sensitivity analysis has been revised and is now in line with the latest guidance from the EB.

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		variation range is out of the 10%, it is impossible that the total investment and the operation cost got lower for the increase trend of the price. And according to the tariff policy of Gansu(which fix the tariff since 2004) and government's policy to control the price, it is also impossible to increase the tariff out of 10%. Last, the annual power supply is based on long series of hydrology data, and is impossible to increase out of 10%.	
Clarification Request 5 Reference documents and data sources for the common practice analysis should be delivered to the DOE.	B.5.24.	Reference documents and data sources have been delivered to the DOE.	☑ See follow-up discussions in B.5 (CAR17).
Clarification Request 6 Please deliver the spreadsheet of the emissions factor calculation (operating margin, build margin and combined margin) to the DOE.	B.6.3.3.	We have delivered the spreadsheet of calculation of the operating margin and build margin emission factors to the DOE.	☑ The spreadsheet has been provided, however, see follow-up discussion above regarding the applied data and values.
Clarification Request 7 It is not clear to the validation team why the electricity imported from the grid would be considered as project emissions when these emissions are equal to or more than 1% of baseline emissions, please clarify it. Please correct as well in B.7.2.	B.7.1.2.	We have deleted the 1% part to correct it.	☑ This could be clarified. There are no project emissions as per the applied methodology.
Clarification Request 8 The evidence of the construction starting date should be delivered to the DOE.	C.1.1.	the Gansu's Daily has been delivered to DOE	☑ See follow-up discussions in B.5.
Clarification Request 9 Please clarify in the PDD whether there are transboundary environmental impacts involved	D.1.4.	Modified in the PDD.	☑ The PDD has been revised accordingly. No transboundary impacts could be identified as

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with the project activity.			per the EIA.

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Annex 2: Information Reference List

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Ref. No.	Issuance and/or submission date (dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
1.	01/05/2008	PDD of “Gansu Datong River Zhuchaxia Hydropower Station”, Version: 01	PP	PDD for GSP
2.	30/11/2007	Approved consolidated baseline and methodology “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, ACM0002 – Version 07	UNFCCC	
3.	26/08/2008	Tool for the demonstration and assessment of additionality, Version 05.2	UNFCCC	
4.	25/06/2008	Participant list of on-site interviews.	TÜV SÜD	
5.	25/06/2008	On-site interviews at the office of GEPIC Darong Electric Power Company Ltd. and at the project site: Validation team: Mr. Carl Zhou Jiangsu TÜV Product Service Ltd., Shenzhen Branch Interviewed persons: Mr. Liu Yong Project Vice Manager, GEPIC Darong Electric Power Company Ltd. Mr. Liu Feng Officer, GEPIC Darong Electric Power Company Ltd. Mr. Li Jun GEPIC Darong Electric Power Company Ltd., (safety and production dept.) Mrs. Yang Niu GEPIC Darong Electric Power Company Ltd., (engineering management dept.) Mr. Li Changfu GEPIC Darong Electric Power Company Ltd., (coordinator for CDM) Mrs. Wang Huan DHV project manager Mr. Hu Deli Local villager Mr. Xi Yuanshun Local villager Mr. Ma Yucheng Project Vice Manager, GEPIC Darong Electric Power Company Ltd. Miss Xing Xiaoyan Project assistant, GEPIC Darong Electric Power Company	TÜV SÜD	

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Ref. No.	Issuance and/or submission date (dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
		Mr. Bao Cunsha Ltd. Local villager		
6.	18/03/1996	Business license, Reg. No. 62010000000268	GEPIC Darong Electric Power Company Ltd.	
7.	13/04/2006	Article about GEPIC Darong Electric Power Company Ltd. indicating the opening ceremony of the Zhuchaxia project on 13/04/2006 (published 15/11/2006).	Gansu Daily	Project starting date
8.	08/03/2006	Monthly Meeting Minutes; File Number: Ganrongdiansijizi[2006]5	GEPIC Darong Electric Power Company	
9.	2002	State Council on the issuance of notice of the power reform program <National Development (2002) 5,>; http://www.china5e.net/laws/index2.htm?id=200608080001	State Council	Common Practice
10.	January 2006	Feasibility Study Report of “Gansu Datong River Zhuchaxia Hydropower Station”.	Northwest Hydro Consulting Engineers, CHECC	
11.	17/06/2006	Approval of Feasibility Study Report of “Gansu Datong River Zhuchaxia Hydropower Station”	DRC of Gansu Province	
12.	April 2006	Environmental Impact Evaluation Report (EIA) of “Datong River Zhuchaxia Hydropower Station”	Environmental Assessment Research Center of Lanzhou University	
13.	07/04/2006	The approval of EIA; No. Ganhuanzifa [2006] 21)	Gansu province EPB	
14.	November 2007	The agreement connect to grid	Gansu power company	
15.	10/07/2006	The approval of water and soil preservation	water power dept. in Gansu province	
16.	07/05/2007	The compensation agreement	Tianzu county land bureau	

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Ref. No.	Issuance and/or submission date (dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
17.	29/06/2009	Modalities of Communication - Gansu Datong River Zhuchaxia Hydropower Station	GEPIC Darong Electric Power Company Ltd. & DHV BEEC Ltd. Co.	
18.	12/10/2006	The purchasing contract for main transformers, No. ZCX-SB-CIV	Xinjiang Tebiandiangong Co. Ltd.	
19.	25/09/2007	Announcement on stakeholder consultation meeting	Gansu Daily	Stakeholder Consultation
20.	11/09/2006	The approval of the lands utilization	state lands resources dept. in Gansu	
21.	2004	National policy: The Document Fagai Price[2004] No.1125	http://www.fz12358.com/seezcvj.asp?id=4643	Tariff cross-check
22.	June 2008	Letter of Approval (LoA) of China; No. 1590	NDRC of China	
23.	26/08/2008	Invoice for Turbines; No. 00824338	Hangzhou Liyuan Generator Device Co. Ltd.	
24.	2006	Yearbook of China Water Resources	China Waterpower Press	
25.	April 2002	Notice on Strictly Prohibiting the Construction of Fuel-fired Power Plants with Installed Capacity of 135MW or below.	General Office of the State Council	
26.	2006	National Statistics Express of Power Industry	China Electricity Council	
27.	2003	Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects State Power	China Electric Power Press	Benchmark
28.	28/11/1987	Notice on Implementation Method of Various Electricity Tariff (No. 101 Shuidiancaizi[1987])	Ministry of Water Resources and Electric Power, State Economic Committee and State Price Bureau	Common Practice
29.	23/04/2001	Notice on Standardizing Electricity Tariff Management (No. 701 Jijiage[2001])	State Planning Committee	Common Practice
30.	2003-2007	China Electric Power Yearbooks	China Electricity Council	

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Ref. No.	Issuance and/or submission date (dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
31.	June 2008	Investment analysis Excel calculation sheet	N.V. Nuon Energy, Trade & Wholesale	
32.	May 2009	Excel file with EF calculations	N.V. Nuon Energy, Trade & Wholesale	
33.	28/05/2008	The acceptance of reservoir filling	Tianzu Zangzu autonomy county DRB and Huzhu Tuzu autonomy DRB	
34.	December 2007	The reservoir filling safety inspection report	China water power electricity science institute	
35.	13/03/2006	Approval of Application of the CDM Development of Zhuchaxia Hydropower Station; (2006) Gan Fa Gai Di Qu Han Zi No. 25	Development and Reform Commission of Gansu Province	
36.	10/03/2006	The Referendum on the Application of CDM Development of Zhuchaxia Hydropower Station	GEPIC Darong Electric Power Company Ltd.	
37.	22/02/2006	Loan Intent Letter on the Datong River Zhuchaxia Hydropower Station Project	Lanzhou Electricity Power Branch of China Construction Bank	
38.	18/05/2006	Datong River Zhuchaxia Hydropower Station, Water Diversion System Engineering Contract Part A (ZCX-TJ-CI-A)	GEPIC Darong Electricity Power Company Ltd. and China Railway 13th Bureau GroupCorporation	
39.	22/06/2006	Datong River Zhuchaxia Hydropower Station, Hydro generator units and accessories (ZCX-SB-CI)	GEPIC Darong Electricity Power Company Ltd. and Tianfa Heavy water and electricity equipment manufacturing Co., Ltd. and Northwest Hydro Consulting Engineers, CHECC	
40.	December 2007	Power Purchase Agreement – Zhuchaxia Hydropower Station	Gansu Electricity Power Company and GEPIC Darong Electricity	

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			Power Company Ltd.	
41.	16/07/2008	Electricity Tariff Document (Ganjiadianli (2008)193)	Gansu Price Bureau	Tariff cross-check
42.	06/06/2006	CDM development contract	GEPIC Darong Electric Power Company Ltd. & DHV BEEC Ltd. Co.	
43.	24/07/2007	Final Memorandum of Understanding for implementation of CDM projects under the Kyoto Protocol	N.V. Nuon Energy, Trade & Wholesale & GEPIC Darong Electric Power Company Ltd.	
44.	17/08/2005	MOU of CDM development cooperation with DHV	GEPIC Darong Electric Power Company Ltd. and DHV Beijing Environmental Engineering Company Ltd.	
45.	09/01/2008	ERPA (Emission Reduction Purchase Agreement)	GEPIC Darong Electric Power Company Ltd. & DHV BEEC Ltd. Co.	
46.	12/06/2007	Proposal for the validation of this and other projects	SGS	
47.	29/07/2008	Tool to calculate the emission factor for an electricity system, Version 01.1	UNFCCC	
48.	2008	Progress payments for Diversion engineering contract A & B; No. 34289, 34295, 34296, 34300, 35352, 35356	China Railway 13th Bureau Group Corporation	
49.	18/04/2009	Electricity of Zhuchaxia until April 18, 2009	GEPIC Darong Electric Power Company Ltd.	
50.	31/10/2008 and 01/12/2008	Electricity Sales Invoices; No. 00395372 and 00179516	GEPIC Darong Electric Power Company Ltd.	Tariff cross-check
51.	06/05/2009	The Finished Investment and Investment Plan for 2009 of Zhuchaxia	GEPIC Darong Electric Power	

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		Hydropower Station	Company Ltd.	
52.	20/02/2009	Auditing Report for Zhuchaxia Hydroplant [2009]060953	Beijing Wulian Fangyuan Certified Public Accountants	
53.	25/06/2008	Letter of Approval (LoA), Netherlands for the Gansu Datong River Zhuchaxia Hydropower Station project	SenterNovem; Ministry of Housing, Spatial Planning and the Environment	
54.	March 2006	Proposal for CER purchase contract between Nuon and Seller (PPT Presentation)	N.V. Nuon Energy, Trade & Wholesale	
55.	13/09/2007	www.dhv.cn: stakeholder consultation meeting – online announcement	DHV	Stakeholder Consultation
56.	25/09/2007	Questionnaires, Meeting materials and participation list	GEPIC Darong Electric Power Company Ltd.	Stakeholder Consultation
57.	11/01/2007	PIN of four Hydroelectric Plants including Zhuchaxia	N.V. Nuon Energy, Trade & Wholesale	
58.	2008	The Income and Cost of Zhuchaxia Hydropower Station During 2008	GEPIC Darong Electric Power Company Ltd.	