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Validation Report

RWE POWER

VALIDATION OF THE CDM-PROJECT:
SICHUAN JIANGYOU LONGFENG HYDROPOWER STATION

REPORT NO. 1029742

2008, July 29

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	
Client: RWE Power AG Huyssenallee 2 45128 Essen Germany		**Project Site(s):** Longfeng Town, Jiangyou City, Sichuan Province, China. GPS coordinates: Powerhouse: 104°42′41″E - 31°37′45″N Dam: 104°42′10″E - 31°39′20″N.	
Project Title:	Sichuan Jiangyou Longfeng Hydropower Station		
Applied Methodology / Version:	ACM0002 / Version 06	**Scope(s):**	1
First PDD Version:		**Final PDD version:**	
Date of issuance:	2007-05-29	Date of issuance:	2008-07-29
Version No.:	2	Version No.:	6
Starting Date of GSP	2007-07-02		
Estimated Annual Emission Reduction:		191616 tCO_2e	
Assessment Team Leader: Dr. Sven Kolmetz		**Further Assessment Team Members:** Sebastian Randig Xuemei Li 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
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CR	Clarification Request
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission reduction
GHG	Greenhouse gas(es)
KP	Kyoto Protocol
MP	Monitoring Plan
NGO	Non Governmental Organisation
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-EB. The ultimate decision on the registration of a proposed project activity rests at the CDM Executive Board and the Parties involved.

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

Sichuan Jiangyou Longfeng 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
- 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 by the EB published under http://cdm.unfccc.int
- 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 Methodlogy (CDM-NM)
- The applied approved methodology
- The technical environment of the project (technical scope)
- Internal and national standards on monitoring and QA/QC
- Technical guideline and information on best practice

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

Once TÜV SÜD receives a first PDD version, it is made publicly available on the internet at TÜV SÜD's webpage as well as on the UNFCCC CDM-webpages 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 will be repeated) and the final PDD will form the basis for the final evaluation as presented by this report. Information on the first and on the final PDD version is presented at 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 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.

2 METHODOLOGY

The project assessment aims at being a risk based approach and is based on the methodology developed in the Validation and Verification Manual, an initiative of Designated and Applicant Entities, which aims to harmonize the approach and quality of all such assessments.

In order to ensure transparency, a validation protocol was customised for the project. TÜV SÜD developed a "cook-book" for methodology-specific checklists and protocol based on the templates presented by the Validation and Verification Manual. 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.

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***
The checklist is organised in sections following the arrangement of the applied PDD version. Each section is then further subdivided. The lowest level constitutes a checklist question / criterion.	*Gives reference to documents where the answer to the checklist question or item is found in case the comment refers to documents other than the PDD.*	*The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached. In some cases sub-checklist are applied indicating yes/no decisions on the compliance with the stated criterion. Any **Request** has to be substantiated within this column*	*Conclusions are presented based on the assessment of the first PDD version. This is either acceptable based on evidence provided (☑), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below). **Clarification Request (CR)** is used when the validation team has identified a need for further clarification.*	*Conclusions are presented in the same manner based on the assessment of the final PDD version.*

Validation Protocol Table 2: Resolution of Corrective Action and Clarification Requests			
Clarifications and corrective action requests	***Ref. to table 1***	***Summary of project owner response***	***Validation team conclusion***
If the conclusions from table 1 are either a Corrective Action Request or a Clarification Request, these should be listed in this section.	*Reference to the checklist question number in Table 1 where the Corrective Action Request or Clarification Request is explained.*	*The responses given by the client or other project participants during the communications with the validation team should be summarised in this section.*	*This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 1, under "Final PDD".*

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

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

2.1 Appointment of the Assessment Team

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

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

It is required that the sectoral scope linked to the methodology has to be covered by the assessment team.

The validation team was consisting of the following experts (the responsible Assessment Team Leader in written in bold letters):

Name	Qualification	Coverage of technical scope	Coverage of sectoral expertise	Host country experience
Dr. Sven Kolmetz	**ATL**	☑	☑	☑
Mr. Sebastian Randig	GHG-A	☑	☑	
Ms. Xuemei Li	GHG-A		☑	☑
Karin Wagner	T		☑	

Dr. Sven Kolmetz is physicist and auditor at the department "TÜV Carbon Management Service" located in the head office of TÜV Süddeutschland in Munich. 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.

Mr. Sebastian Randig is an auditor at the department "TÜV Carbon Management Service" located in the head office of TÜV Süddeutschland in Munich. In his position he is 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.

Ms. Xuemei Li is an auditor for environmental management systems (according to ISO 14001) at TUV SUD China. She is based in Guangzhou. In her position she is responsible for the implementation of validation, verification and certifications audits for management systems. She has received training in the CDM validation process and participated already in several CDM project assessments.

Karin Wagner is an auditor trainee at 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. She has received training in the CDM validation process and participated in several CDM project assessments.

2.2 Review of Documents

The first PDD version submitted by the client and additional background documents related to the project design and baseline were reviewed 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

In the period of April 19th, 2007 TÜV SÜD performed interviews on-site with project stakeholders to confirm selected information and to resolve issues identified in the first document review. The table below provides a list of all persons interviewed in the context of this on-site visit.

Name	Organisation
Mr. Shen Zemin	Sichuan Jiangyou Longfeng Hydro Power Co., Ltd.
Mr. Cheng Fangping	Sichuan Jiangyou Longfeng Hydro Power Co., Ltd.
Mr. Yang Guoan	Sichuan Jiangyou Longfeng Hydro Power Co., Ltd.
Mr. Lin Feng	Sichuan Jiangyou Longfeng Hydro Power Co., Ltd.
Mr. Andrea Rumiz	Enecore Carbon Ltd.
Mr. Joachim Binder	Kelag AG
Ms. Katja Brusinski	RWE Power AG
Mr. Philipp Weiss	RWE Power AG
Mr. Yang Jingqiu	Beijing Tianqing Power International CDM Consulting Co., Ltd.
Mr. Jiang Dongkui	Beijing Tianqing Power International CDM Consulting Co., Ltd.
Mr. Yang Maohua	Jiangyou City Environmental Protection Bureau
Mr. Gao Zhiqiang	Jiangyou City Longfeng County

2.4 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 positive conclusion on the project design. The Corrective Action Requests and Clarification Requests 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 summarised in chapter 3 below and documented in more detail in the validation protocol in annex 1.

2.5 Internal Quality Control

As final step of a validation the validation report and the protocol have to undergo and internal quality control procedure by the Certification Body “climate and energy”, i.e. each report has to be approved either by the head of the certification body or his deputy. In case one of these two persons is part of the assessment team approval can only be given by the other one.

It rests at the decision of TÜV SÜD’s Certification Body whether a project will be submitted for requesting registration by the EB or not.

3 SUMMARY OF FINDINGS

The assessment work and the main results are described below, including a short summary of the type of the project activity, the resolution of the requests raised by the DOE as well as the assessment and outcome of the additionality and the emission reduction calculations. A more detailed description of the findings and their resolution can be found in Annex 1, Table 2.

History of the validation process

The audit team has been provided with a draft PDD in May 2007. Based on this documentation a document review and a fact finding mission in form of an on-site audit has taken place. Afterwards the client decided to revise the PDD according to the CARs and CRs indicated in the audit process. The final PDD version submitted in July 2008 serves as the basis for the 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 to achieve a reduction of anthropogenic GHG emissions by sources and to contribute to sustainable development.

Project description

Sichuan Jiangyou Longfeng Hydropower Station is a new hydro power plant with reservoir sited in Longfeng Town, Jiangyou City, Sichuan Province, P. R. China. The project is a diversion type hydropower station with an installed capacity of 54 MW. The power density is 35 W/ m^2 .The normal water level of the reservoir is 496.50 m, the total storage capacity is 14,600,000 m^3, and the surface area at full reservoir level is 1.54 km^2. The power generated by the proposed project will be transmitted to Mianyang Chengbei transformer station via one 110 kV bus line of 6.3 km, then to the Sichuan Grid, and finally to the Central China Grid. The project activity will displace electricity generated by thermal power plants and thus reduce GHG emissions of more than 1.3 Mio tCO_2e during the first crediting period of seven years.

Findings

In total the assessment team expressed 4 Clarification Requests and 9 Corrective Action Requests.

The key findings during the validation process were related to the provision of information which was missing or not updated (CAR 1,2,3,4,5,7,8,9).

Some additional material regarding the project equipment, investment analysis (IRR calculation) and common practice analysis had to be delivered to the DOE for clarification (CR 1,2,3,4).

Regarding the emissions factor calculation, project participants were requested at the end of the validation process to use the most recent available DNA data under consideration of TUEV´s findings (CAR 6).

Considering these findings the PDD version 2 has been revised and the latest PDD version is in compliance with the CDM requirements.

Baseline calculation

The calculation of the baseline emissions followed the procedures described in the methodology ACM0002 Version 06. The Central China Power Grid is considered to be the project boundary.

The operating margin emission factor (EF_{OM}) was determined based on the simple OM method. The ex-ante option was chosen for this calculation.

The calculation of the build margin emission factor (EF_{BM}) was based on modified methods agreed by the EB, because plant specific data are not available in China. The emission factor of the thermal power plants was calculated by the proportion of the emissions of coal, gas and oil times the emis-

sion 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 values for EF_{OM} and EF_{BM} calculated for the project were slightly different from the values indicated in the latest publication of the NDRC (August 2007). However, the data published by the NDRC is based on inaccurate emission factors of coke and refinery gas and outdated values for the overall capacity of the connected grids. The amendment of the calculation which is based on the proper emission factors and the latest data for the imported electricity that is presented in the IPCC 2006 guidelines and the Chinese Electricity Yearbooks results in a slightly higher emission factor for the EF_{OM} and a significantly lower EF_{BM} (see table below). This results in an overall lower combined margin emission factor (EF_{CM}) and can therefore be conservative and hence was accepted by TÜV SÜD.

	NDRC (August 2007)	Project/PDD	Difference
EF(OM) in tCO_2e/MWh	1.2899	1.2909	+0.001
EF(BM) in tCO_2e/MWh	0.6592	0.5046	-0.1546
EF(CM) in tCO_2e/MWh (based on a weight factors of 0.5)	0.9746	0.89775	-0.07685

Neither project emissions nor leakage need to be considered for this type of project activity as per the methodology. Hence, the overall emission reductions equal the baseline emissions.

TÜV SÜD validated the process presented in the PDD to calculate the emission reductions and confirms that the calculations are in line with the methodology and also presented in a transparent manner.

Additionality

The additionality of this project as well as the timeline with respect to the early consideration of CDM was checked thoroughly by the assessment team.

The chronological listing of the major events associated with the proposed project activity clearly indicates that CDM was seriously considered before the starting date. The project started with the approval of the bank loan in November 2006 (IRL 18). Prior to that date, CDM was seriously taken into consideration which was demonstrated by several events and actions described as following:

An initial feasibility study was performed in April 2005 (IRL 6) and approved three months later in July 2005 (IRL 7). However, the suggested and approved project plan was re-designed and the capacity increased by 3 MW resulting in a total capacity of 54 MW. The re-designed project was described in the Preliminary Design Report (PDR, IRL 39) issued in September 2006. However, due to the project's remote location as well as additional costs associated with the construction of the transmission line, the static investment increased and was evaluated in detail again as shown in the Investment Budget Supplementary Report (IRL 44). The overall financial risk was re-assessed indicating that the project would not be economically attractive any more with the increased investment costs (IRL 42). These two reports were issued in November 2006 and also approved the same month by the local government (IRL 45) suggesting at the same time that the project owner should apply for CDM in order to reduce the financial risks associated with this project.

Therefore, the project owner finally decided to apply for CDM on November 17, 2006 and started CDM cooperation work with Beijing Tianqing International CDM Consulting Co., Ltd. which later on completed the application of the baseline study and monitoring methodology for this project.

Once it was clear how to reduce the financial risks, the bank loan was approved by the Agriculture Bank of China three days later on November 21, 2006 (IRL 18). This date was also considered as the starting date of the project activity in the CDM/additionality context. TÜV SÜD was assigned with the validation work in approximately half a year later in June 2007, hence the project was not facing any further delays.

In summary, TÜV SÜD can confirm that CDM was seriously taken into consideration in order to proceed and implement the proposed hydropower project.

The steps of the tool for the demonstration and assessment of additionality (hereafter: additionality tool) were applied correctly and demonstrate clearly that this project activity is not a baseline scenario and that the emission reductions are hence additional. The individual steps are discussed below.

As part of the first step of the additionality tool, one alternative scenario was identified that is in line with currently enforced laws and regulations in China and that does not face any barriers (i.e. the continuation of the baseline scenario, which is the power generation by fossil-fuel fired power plants). TÜV SÜD was able to verify the existence of this scenario and can also confirm that this alternative is realistic and credible. Hence, the requirements of step one of the additionality tool were fulfilled successfully.

The benchmark analysis was applied in step two of the additionality tool to demonstrate that the project activity is not economically or financially feasible without the revenue from the sale of CERs. The applied benchmark of 8% (project, after tax) indicated in the Financial Supplementary Report (IRL 42) is also suggested by the China Electric Power Press in March 2003 and widely accepted in the Chinese power sector and was therefore found to be appropriate for this project activity.

TÜV SÜD performed a thorough review of the input parameters used for the calculation of the IRR of the project. The key input parameters such as total investment, O&M costs, power generation and the tariff were derived from the values presented in the officially approved Financial Supplementary Report (IRL 42, 45). This report was issued and approved in November 2006, and can therefore be considered as valid at the time of the investment decision (i.e. project started at the end of November 2006).

TÜV SÜD also checked the credibility and plausibility of the input data by comparing the applied values with TÜV's internal statistical results of the evaluation of 250 hydropower projects in China that are either already registered or under validation.

The investment costs were calculated at approximately 9.1 Mio RMB/MW, about 2 Mio RMB/MW higher than the average cost of 6.8 Mio RMB/MW. These elevated costs are due to the remote location and the construction of the power transmission line. The O&M costs equal about 2.2% of the total investment costs, and are slightly lower than the average ratio of 2.5%, probably due to the elevated investment costs. The applied tariff of 0.288 RMB/kWh (gross tariff) is slightly higher than the average tariff of 0.24 RMB/kWh (net tariff). This gross tariff of 0.288 RMB/kWh was also applied to calculate the project IRR (after tax), and can thus be considered conservative in the CDM/additionality context. The plant is estimated to operate about 4700 hours per year, resulting in a higher load factor of 54% compared to the average of 44%. A so-called 'coefficient of effective electricity' of 85% is applied resulting in a total power generation of almost 253800 MWh per year, but a net supply of only 213440 MWh per year. This factor is also indicated in the Preliminary Design Report (IRL 39). In addition, the SL16-95 document further refers to these factors. The 15% loss is associated with the surplus of electricity during the wet season, when the grid is not able to buy all of the power that could potentially be generated by the plants. TÜV SÜD checked the sup-

plied documents and con-firms that a 15% loss is deemed reasonable and was also well known at the time of the investment decision.

In summary, TÜV SÜD checked the applied values thoroughly and based on local and sectoral expertise, TÜV SÜD confirms that these values are realistic and credible and appear to be valid at the time the investment decision was made.

The IRR (project, after tax) was calculated at 6.89%, well below the benchmark of 8% and hence in the absence of additional revenues through CDM not financially attractive. The same IRR was also indicated in the Financial Supplementary Report (IRL 42, 45).

The sensitivity analysis was conducted on the project activity for the critical parameters like total investment, annual O&M costs as well as annual power generation and the tariff. The results indicated that the IRR does not overcome the benchmark, thereby demonstrating that the project activity is not viable without any CDM revenues. TÜV SÜD confirms that a 10% variation is deemed reasonable and was also observed for similar projects in the past.

Since step two was fulfilled successfully, step three was skipped as per the additionality tool.

The last step of the additionality tool, the common practice analysis could also be verified by TÜV SÜD and deemed to be acceptable and realistic. It was demonstrated by an analysis of the existing hydropower projects in the same province that there is a total of eight similar projects in the area (i.e capacity between 50 MW and 100 MW which have a similar investment scale, and implemented after 2002 when several changes of the regulations for the generation of electricity were implemented in China) (IRL 32).

Five of these projects are also applying for CDM and are currently under validation. The remaining three projects are either enjoying favourable investment opportunities or are facing a significantly higher load factor of almost 88%.

TÜV SÜD confirms that it was clearly demonstrated that essential and also plausible and realistic distinctions exist between the project activity and similar activities.

In summary, it is sufficiently demonstrated that the requirements for the additionality are fulfilled and that the project's emission reductions are additional.

Monitoring

The project applies the approved monitoring methodology ACM0002 version 06 "Consolidated monitoring methodology for zero emissions grid-connected electricity generation from renewable sources". The selected monitoring methodology is applicable for the project activity as it involves grid-connected renewable power generation using hydropower.

In line with the methodology, the only parameter that needs to be monitored ex-post is the net electricity exported to the grid by the project activity. For this case, the electricity supplied to the grid as well as the electricity imported from the grid is measured continuously and recorded monthly. The data will be cross verified against the sales receipts from the grid company.

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.de/KE/Wegweiser/Guide2_1.aspx?ID=3294&Ebene1_ID=26&Ebene2_ID=997&mode=1	
Starting date of the global stakeholder consultation process: 2007-07-02	
Comment submitted by: None	**Issues raised:** -
Response by TÜV SÜD: -	

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5 VALIDATION OPINION

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

Sichuan Jiangyou Longfeng Hydropower Station.

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 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.

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 using a risk based approach as described above. 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, 2008-07-29

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

Munich, 2008-07-29

Assessment Team Leader

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Annex 1: 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.	☑	☑
A.1.2.	Are there any indication concerning the revision number and the date of the revision?	1, 2	The available GSP PDD is indicated as 02nd version dated May 29, 2007. **Corrective Action Request No.1.** Please add the revision history of PDD versions. The completing date should be written into DD/MM/YY.	**CAR 1**	☑
A.1.3.	Is this consistent with the time line of the project's history?	1, 2	The GSP has been started with the former version.	☑	☑
A.2. Description of the project activity					
A.2.1.	Is the description delivering a transparent overview of the project activities?	1, 2	An overview of the project is described transparently in section A.2 of the PPD. Accordingly the reservoir has daily regulating capacity with a total installed capacity of 54MW and a surface area at full reservoir level of 1.54km^2. The power density is 35W/m^2. On the average, the project activity is expected to operate 4,700 hours per year, which corresponds to an average annual generationn of 253,800MWh and a net electricity supply to the grid of 213,440 MWh. The Environmental Impact Assessment of the proposed project has been approved by Sichuan Environment Protection Bureau on 27/03/2006. The project has been approved by the Development and Reform Commission of Sichuan Province on 13/04/2007. Project construction will be started on Nov. 2007 and its completion is expected by 31/12/2009.	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
A.2.2.	What proofs are available demonstrating that the project description is in compliance with the actual situation or planning?	1, 2, 6, 7, 8, 9	During the on-site audit numerous proofs for the described assumptions were evidenced. They are summarized in the reference list, Annex 2 to this report. The planning is described in the feasibility study. The following data deliver evidences for the actual situation of the project activity: - Feasibility study - EIA and the approval of EIA - Project approval	☑	☑
A.2.3.	Is the information provided by these proofs consistent with the information provided by the PDD?	1, 2	Yes, information provided in PDD is consistent with the implementation of the project.	☑	☑
A.2.4.	Is all information presented consistent with details provided by further chapters of the PDD?	1, 2	Yes, there are no contradictions in the PDD.	☑	☑
A.3. Project participants					
A.3.1.	Is the form required for the indication of project participants correctly applied?	1, 2	The form is correctly applied. In Table A.1 and Annex 1 the two parties involved in the project are mentioned: RWE power AG and Sichuan Jiangyou Longfeng Hydro Power Co., Ltd.	☑	☑
A.3.2.	Is the participation of the listed entities or Parties confirmed by each one of them?	1, 2	**Open issue** Pls. deliver the LoA issued by China and Germany together with MoC countersigned by project participants to DOE before raising the request of registration.	**Open issue**	**Open issue**
A.3.3.	Is all information on participants / Parties provided in consistency with details provided by further chapters of the PDD (in	1, 2	The information provided is in consistency with further chapters of the PDD, the parties listed in Annex 1 are identical with those listed under A.3.	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
	particular annex 1)?				
A.4. Technical description of the project activity					
A.4.1.	*Location of the project activity*				
A.4.1.1.	Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	1, 2	The project location could be clearly identified according to the PDD. The proposed project is located in Longfeng Town, Jiangyou City, Sichuan Province, China. The station is based 18km from Jiangyou City and 20km from Mianyang City. The dam is located near Boniutan Village and the powerhouse is located near Longfeng Village. The dam site is 3.4km from the government of Qinglian Town; the powerhouse is 1.5km from the government of Longfeng Town. And the distance between the dam site and powerhouse is 2.6km. The project area is located at a longitude of 104°41′39″E—104°42′49″E, and latitude of 31°37′01″N—31°41′45″N. **Corrective Action Request No.2.** To increase transparency, please clearly describe the GPS data of both the powerhouse and the dam site.	**CAR 2**	☑
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, 6, 7, 8,9, 33	A number of documents give evidence that the project proponents can implement the project at the given site (refer also to Annex 2): • The approval of EIA. • Approval of Report for Sichuan Jiangyou Longfeng Hydropower Station, issued by the Development and Reform Commission of Sichuan Province. • The Approval for connection to Sichuan Grid	☑	☑
A.4.2.	*Category(ies) of project activity*				

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
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 comes under scope 1 (Energy industries (renewable/non- renewable sources) as it deals with energy generation.	☑	☑
A.4.3. Technology to be employed by the project activity				
A.4.3.1. Does the technical design of the project activity reflect current good practices?	1, 2	The domestically sourced project design is standard hydropower technology and hence reflects the current good practices to use renewable resources to generate electricity.	☑	☑
A.4.3.2. Does the description of the technology to be applied provide sufficient and transparent input/ information to evaluate its impact on the greenhouse gas balance?	1, 2	Yes, the project activity comprises the use of water power for the substitution of grid supplied electricity mainly from coal fired plants. There is no doubt that this technology will reduce the GHG emissions significantly.	☑	☑
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 does not. There is no technology transfer from annex-I countries to China. **Clarification Request No. 1.** The purchase agreements of the key equipments (turbine and generator) are not available on-site.	**CR 1**	☑
A.4.3.4. Is the technology implemented by the project activity environmentally safe?	1, 2	Yes. As the project is a hydro power project, it is clear that the technology implemented by the project activity is environmentally safe.	☑	☑
A.4.3.5. Is the information provided in compliance with actual situation or planning?	1, 2	Yes, it is in compliance as validated on-site on July 26 2007. Please see A.2.2.	☑	☑
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	The common practice for electricity generation is still coal-fired power plant. Hence, the project definitely would result in a better performance than the common practice.	☑	☑
A.4.3.7. Is the project technology likely to be subs-	1, 2	It is not expected that there will be a substitution because the tur-	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
	tituted by other or more efficient technologies within the project period?		bines, generators and the other equipment will be newly commissioned and installed. The expected life time of the project is under normal circumstances longer than the crediting period.		
A.4.3.8.	Does the project require extensive initial training and maintenance efforts in order to be carried out as scheduled during the project period?	1, 2	To guarantee safe operation during the life time, the operators would be send for training to other similar existing power plants, to acquire the knowledge on maintenance and operation.	☑	☑
A.4.3.9.	Is information available on the demand and requirements for training and maintenance?	1, 2,	As confirmed on-site, the start of construction of this project will be in autumn 2007. Thus there is no detailed information available yet on training requirements.	☑	☑
A.4.3.10.	Is a schedule available for the implementation of the project and are there any risks for delays?	1, 2	The Feasibility Study Report and Preliminary Design Report of Sichuan Jiangyou Longfeng Hydropower Station both go along with the time schedule as presented by the project owner on-site. Mr. Shen Zemin, General Manager of Sichuan Jiangyou Longfeng Hydro Power Co., Ltd. Reports that he would not expect any delays; the river bed is however affected by floods regularly, thus the audit team can see a potential risk of delays with regards to the schedules implementation. **Corrective Action Request No.3.** Please add a time schedule of the project activity into the revised PDD.	**CAR 3**	☑
A.4.4.	*Estimated amount of emission reductions over the chosen crediting period*				
A.4.4.1.	Is the form required for the indication of projected emission reductions correctly applied?	1, 2	The project emission reductions are shown in chapter A.4.4 Table A.2 according to the guidelines.	☑	☑
A.4.4.2.	Are the figures provided consistent with other data presented in the PDD?	1, 2	The yearly emission reduction is estimated to be 201,583 tCO2 which is the result of emission factor of the grid times the annual electricity fed to the grid. The same figure is quoted throughout the entire PDD.	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
A.4.5.	*Public funding of the project activity*				
A.4.5.1.	Is the information provided on public funding provided in compliance with the actual situation or planning as available by the project participants?	1, 2, 6	According to the statement in A.4.5. of the PDD there is no public funding for the project activity. By reviewing the financial discussion of the FSR, it became evident that no public funds are used by the project.	☑	☑
A.4.5.2.	Is all information provided consistent with the details given in remaining chapters of the PDD (in particular annex 2)?	1, 2	Yes, the information on public funding is consistent with the information provided in Annex 2 where is also mentioned that no public funding takes place.	☑	☑
B. Application of a baseline and monitoring methodology					
B.1. Title and reference of the approved baseline and monitoring methodology					
B.1.1.	Are reference number, version number, and title of the baseline and monitoring methodology clearly indicated?	1, 2, 3	Yes, as clearly indicated the applied methodology is ACM0002, version 6 and the tool for the demonstration and assessment of additionality, version 4.	☑	☑
B.1.2.	Is the applied version the most recent one and / or is this version still applicable?	1,2, 3	The applied version 6 of the methodology ACM0002 and version 3 of the tool for the demonstration and assessment of additionality respectively are the most recent one as of the date when the GSP was started, lasting from 2nd July till 31st July 2007.	☑	☑
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	The project activity fulfils the criteria of ACM0002: - the new hydro electric power project is a run-of-river hydropower station; - it does not involve switching from fossil fuels to renewable energy at the project site; - the geographic and system boundaries of Southern China Grid can be clearly identified and the information of this grid is available.	☑	☑

<table>
<tr><th colspan="2">CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PDD in GSP</th><th>Final PDD</th></tr>
<tr><td colspan="2"></td><td></td><td>Thus, the baseline methodology deems to be the most applicable for this project among the existing approved baseline methodologies.</td><td></td><td></td></tr>
<tr><td>B.2.2.</td><td>Criterion 1:
Type of capacity addition by renewable energy</td><td>1, 2</td><td><table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Evidences provided in the PDD?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.2.3.</td><td>Criterion 2:
Exclusion of fuel switching activities</td><td>1, 2</td><td><table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Evidences provided in the PDD?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.2.4.</td><td>Criterion 3:
Defined electricity grid boundaries</td><td>1, 2</td><td><table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Evidences provided in the PDD?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.2.5.</td><td>Criterion 4:
Approved inclusion in other methodologies (if applied only)</td><td>1, 2</td><td>N.A</td><td>☑</td><td>☑</td></tr>
</table>

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
B.3. Description of the sources and gases included in the project boundary				
B.3.1. Source: Fugitive Emissions from non-condensable gases (geothermal activities only) Gas(es): CO_2, CH_4 Type: Project Emissions	1, 2	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.3.2. Source: Emissions from combustion of fossil fuels (geothermal activities only) Gas(es): CO_2 Type: Project Emissions	1, 2	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 (new hydroelectric activities only) Gas(es): CO_2, CH_4 Type: Project Emissions	1, 2	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.3.4. Source: Emissions from electricity generation in fossil fuel fired power plants of the project electricity system Gas(es): CO_2	1, 2	Boundary checklist / Yes / No Source and gas(es) discussed by the PDD? N.A Inclusion / exclusion justified? N.A Explanation / Justification sufficient? N.A	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
	Type: Baseline Emissions		Consistency with monitoring plan? N.A		
B.3.5.	Source: Emissions from electricity generation in fossil fuel fired power plants of any connected electricity system Gas(es): CO_2 Type: Baseline Emissions	1, 2	Boundary checklist: Yes / No Source and gas(es) discussed by the PDD? 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 Gas(es): CO_2 Type: Baseline Emissions		Boundary checklist: Yes / No Source and gas(es) discussed by the PDD? N.A Inclusion / exclusion justified? N.A Explanation / Justification sufficient? N.A Consistency with monitoring plan? N.A	☑	☑
B.3.7.	Do the spatial and technological boundaries as verified on-site comply with the discussion provided by the PDD?	1, 2	Referring to the delineation of grid boundaries which is provided by NDRC (China NDA), the connected electricity system is defined as the South China Grid, which is also verified by the auditor on site.	☑	☑
B.4. Description of how the baseline scenario is identified and description of the identified baseline scenario					
B.4.1.	Is it clearly described that the baseline is represented by the combined margin of the grid the activity will be connected to?	1, 2	It's clearly stated in the PDD that the baseline emissions are equal to power generated by the project activity and delivered to the grid, multiplied by the baseline emission factor. The baseline emission factor is equal to the combined margin: a weighted average of the operating margin emission factor and the build margin emission factor.	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
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	☑	☑
B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity (assessment and demonstration of additionality):					
B.5.1.	Is evidence provided, that CDM has been considered seriously in the decision to proceed with the project activity?	1, 2, 3	CDM was seriously considered prior to the project start. This was evidenced by a directorate decision, and a follow-up application letter for CDM at the NDRC.	☑	☑
B.5.2.	Have realistic and credible alternatives been identified providing comparable outputs or services? (step 1a)	1, 2	The project sponsor is a hydro project developer, the possible alternatives to the project include: • Fossil fuel-fired power generation • Renewable energy power • The proposed hydropower activity, without the support of CDM • The same service of power supply is provided from grid	☑	☑
B.5.3.	Is the project activity without CDM included in these alternatives? (step 1a)	1, 2	Yes, it is included as third option, please refer to B.5.3 above.	☑	☑
B.5.4.	Is a discussion provided for all identified alternatives concerning the compliance with applicable laws and regulations? (step 1b)	1, 2	Yes, the PDD states that, according to a “Notice of the General Office of the State Council concerning the Strict Prohibition of the Construction of Thermal Power Units with a Capacity of 135MW or Below, Guo Ban Fa Ming Dian [2002] Document No.6” conventional coal-fired power plants are consistent with regulations although the construction of small-scale power plants with a ca-	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
			pacity under 135 MW has been prohibited. The document could be checked and the statement be verified on-site. A thermal power plant with equivalent annual power generation is not in compliance with Chinese relevant laws and regulation. The first and fourth alternative are in compliance with Chinese relevant laws and regulations.		
B.5.5.	In case the PDD argues that specific laws are not enforced in the country or region: Is evidence available concerning that statement? (step 1b)	1, 2	All the laws quoted in the PDD are enforced in this project; hence, this section is not applicable.	☑	☑
B.5.6.	In case of applying step 2 / investment analysis of the additionality tool: Is the analysis method identified appropriately (step 2a)?	1, 2	3 analysis methods are provided according to the additionality tool. Because the proposed project generates economic benefits through the sales of electricity other than CDM revenue, therefore, the Option I (simple cost analysis) can't be taken. Moreover, the Option II (investment comparison analysis) only applies to projects where alternatives should be similar investment projects, however, in this case, the baseline scenario is the South China Grid; hence, Option II can't be adopted either. It deems that Option III (benchmark analysis) is the only applicable alternative. Here the benchmark IRR quoted from "Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects" is used. The IRR benchmark is 8% (including VAT). **Corrective Action Request No.4.** To improve transparency, the wording "Grid price" of Table B.3 should be revised to "tariff".	**CAR 4**	☑
B.5.7.	In case of Option I (simple cost analysis): Is it demonstrated that the activity produces no economic benefits other than CDM income?	1, 2	The simple cost analysis is not applicable for the proposed project because the project activity will produce economic returns (from electricity sale to the grid) other than CERs income.	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
B.5.8.	In case of Option II (investment comparison analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?	1, 2	The investment comparison analysis is also not applicable for the proposed project because the project investor makes a go-or-no-go decision and the investor has no investment options to compare with.	☑	☑
B.5.9.	In case of Option III (benchmark analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?	1, 2	Yes, the IRR is the most suitable financial indicator. A benchmark analysis in which the Internal Rate of Return (IRR) of the project is calculate is performed and compared to a benchmark stated in the Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects, issued by the State Power Corporation of China. This publication provides an 8% Internal Rate of Return (IRR) benchmark as a guideline for investments in the power sector.	☑	☑
B.5.10.	In case of Option II or Option III: Is the calculation of financial figures for this indicator correctly done for all alternatives and the project activity?	1, 2, 6	See B.5.10 The financial figures are consistent with the ones in FSR. **Clarification Request No. 2.** Please provide an IRR spreadsheet just in English.	**CR 2**	☑
B.5.11.	In case of Option II or Option III: Is the analysis presented in a transparent manner including publicly available proofs for the utilized data?	1, 2, 6	See B.5.10 The financial figures are consistent with the ones in FSR.	☑	☑
B.5.12.	In case of applying step 3 (barrier analysis) of the additionality tool: Is a complete list of barriers developed that prevent the different alternatives to occur?	1, 2	According to the PDD the projects faces financing barrier and electricity sale barrier.	☑	☑
B.5.13.	In case of applying step 3 (barrier analysis): Is transparent and documented evidence provided on the existence and sig-	1, 2	**Clarification Request No. 3.** Please provide the evidences for many difficulties in obtaining a	**CR 3**	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
	nificance of these barriers?		bank loan and for uncertainty of Grid Price.		
B.5.14.	In case of applying step 3 (barrier analysis): Is it transparently shown that the execution of at least one of the alternatives is not prevented by the identified barriers?	1, 2	See above.	☑	☑
B.5.15.	Have other activities in the host country / region similar to the project activity been identified and are these activities appropriately analyzed by the PDD (step 4a)?	1, 2	Five hydro projects in Sichuan Province, all commissioned since 2000, with a capacity ranging from 45 and 70 MW are analyzed. The Tongzhong Hydropower Station and the Tongkou Hydropower Station are greatly supported by national or local governments' favourable policies concerning finance taxation etc. The Yongle Hydropower Station, the Wanba Hydropower Station and the Dechang Sankeshu Hydropower Station, have been greatly supported by a favourable national credit policy. **Corrective Action Request No.5.** Supporting documentation for the statements should be provided. **Clarification Request No. 4.** Please give evidence why the common practice analysis is limited to plants that have been commissioned after 2000, with a capacity of 45 – 70MW? Why is it limited to this specific region (and not to the grid)?	**CAR 5** **CR 4**	☑
B.5.16.	If similar activities are occurring: Is it demonstrated that in spite of these similarities the project activity would not be implemented without the CDM component (step 4b)?	1, 2	Compared with the proposed project, the other projects are characterized by more favorable water resources and better geographical conditions; they require shorter transmission lines, thus requiring less investment for electricity output engineering. Finally, they faced lower labor, equipment, and materiel costs. Therefore, the existing power stations did not face the barriers that exist for the proposed project activity. In any case, they do not represent the prevailing practice in the region. In conclusion, the project faces several barriers, which would pre-	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		vent its implementation without CDM incentives. Income from the sale of CERs would help to overcome these barriers. Hence, the proposed project activity is not the baseline scenario, and is therefore additional.		
B.6. Emissions reductions				
B.6.1. Explanation of methodological choices				
B.6.1.1. Is it explained how the procedures provided in the methodology are applied by the proposed project activity?	1, 2	The calculation of the emission reduction is applied according to the steps described in ACM0002: - Calculation of the Operating Margin Emission Factor - Calculation of the Build Margin Emission Factor - Calculation of the Combined Margin Emission Factor These steps are described in a transparent manner. The ex-ante approach is chosen for the baseline emission calculation.	☑	☑
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	The OM and BM published by the Chinese DNA on Dec. 15th, the IPCC 1996 values were adopted for the calculation of the emission factor according to the methodology's advice. **Corrective Action Request No.6.** As new emission factors were published by the NDRC in August 2007, please clarify if you wish to revise the emission factor displayed in the GSP PDD so that it can be checked again by the DOE.	**CAR 6**	☑
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 moni-	1, 2	According to the methodology, the project participants need not to consider the project emissions.	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
	tored?				
B.6.1.4.	Are the formulae required for the determination of baseline emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1, 2	Yes, the formulae to calculate the baseline emissions (numbered B.1 to B.13 in the PDD) are correctly presented. They are in compliance with the ones defined in the methodology ACM0002 version 06.	☑	☑
B.6.1.5.	Is the choice of options to determine the emissions factor (OM, BM) justified in a suitable and transparent manner?	1, 2	Yes, the choice of options to determine the Emission Factor is fully justified in the PDD. Both dispatch analysis and average OM are excluded and simple OM is identified as suitable calculation method.	☑	☑
B.6.1.6.	In case of alternative weighing factors for the Combined Margin: Is the quantification of the alternative weighing factor justified in a suitable and transparent manner?	1, 2	Not applicable. The default weights for hydro power projects in the 6th version of ACM0002 (OM 0.5 and BM 0.5 respectively) are used.	☑	☑
B.6.1.7.	In case of alternative weighing factors for the Combined Margin: Is the guidance for the PDD concerning the acceptability of alternative weights considered in the discussion?	1, 2	See B.6.1.6.	☑	☑
B.6.1.8.	Are the formulae required for the determination of leakage emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1, 2	No leakage is considered in accordance with the methodology.	☑	☑
B.6.1.9.	Are formulae required for the determination of emission reductions correctly presented?	1, 2	Formulae in the PDD are clearly presented for the determination of the emission reduction. As the project emission and leakages are both zero, the emission reduction is equal to the baseline emission.	☑	☑
B.6.2.	*Data and parameters that are available at validation*				

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<tr><th colspan="2">CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PDD in GSP</th><th>Final PDD</th></tr>
<tr><td>B.6.2.1.</td><td>Is the list of parameters presented in chapter B.6.2 considered to be complete with regard to the requirements of the applied methodology?</td><td>1, 2</td><td>Yes. A list of parameters is presented according to ACM0002, denoted table B.7.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.2.</td><td>Is the choice of ex-ante or ex-post vintage of OM and BM factors clearly specified in the PDD?</td><td>1, 2</td><td>For the calculation of the emission reductions the ex-ante approach has been used.</td><td>☑</td><td>☑</td></tr>
<tr><td colspan="6">Fill in the required amount of sub checklists for monitoring parameter and comment any line answered with “No”</td></tr>
<tr><td>B.6.2.3.</td><td>Parameter Title:
Annual electricity supplied to the grid prior to retrofit
(applicable only for retrofit and modification activities)</td><td>1, 2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N.A</td></tr><tr><td>Data unit correctly expressed?</td><td>N.A</td></tr><tr><td>Appropriate description of parameter?</td><td>N.A</td></tr><tr><td>Source clearly referenced?</td><td>N.A</td></tr><tr><td>Correct value provided?</td><td>N.A</td></tr><tr><td>Has this value been verified?</td><td>N.A</td></tr><tr><td>Choice of data correctly justified?</td><td>N.A</td></tr><tr><td>Measurement method correctly described?</td><td>N.A</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.4.</td><td>Parameter Title:
Emission factor of the grid (CM)</td><td>1, 2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
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<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>B.6.2.5. Parameter Title:
Operating margin (OM) emission factor of the grid</td><td>1, 2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.6. Parameter Title:
Build margin (BM) emission factor of the grid</td><td>1, 2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.7. Parameter Title:
fuel consumption of each power source</td><td>1, 2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		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.6.2.8. Parameter Title: emission coefficient of each fuel	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	☑	☑
B.6.2.9. Parameter Title: electricity generation of each power source	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	☑	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PDD in GSP</th><th>Final PDD</th></tr>
<tr><td>B.6.2.10. Parameter Title:
surface area of full reservoir level
(for new hydroelectric activities only)</td><td>1, 2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>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?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Choice of data correctly justified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>No</td></tr></table><u>Corrective Action Request No.7.</u>
The surface area at full reservoir level is 1.54km^2 according to chapter A.2. Please add the parameter to chapter B.6 in the revised PDD.</td><td>CAR 7</td><td>☑</td></tr>
<tr><td>B.6.2.11. Parameter Title:
fraction of time with low costs /must run plant at the margin
(for simple adjusted OM only)</td><td>1, 2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N.A</td></tr><tr><td>Data unit correctly expressed?</td><td>N.A</td></tr><tr><td>Appropriate description of parameter?</td><td>N.A</td></tr><tr><td>Source clearly referenced?</td><td>N.A</td></tr><tr><td>Correct value provided?</td><td>N.A</td></tr><tr><td>Has this value been verified?</td><td>N.A</td></tr><tr><td>Choice of data correctly justified?</td><td>N.A</td></tr><tr><td>Measurement method correctly described?</td><td>N.A</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.12. Parameter Title:
electricity imports</td><td></td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N.A</td></tr><tr><td>Data unit correctly expressed?</td><td>N.A</td></tr><tr><td>Appropriate description of parameter?</td><td>N.A</td></tr></table></td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		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.6.2.13. Parameter Title: CO_2 emission coefficient of fuels used in connected grids	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	☑	☑
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	The entire calculation processes are fully demonstrated in B.6.1 and the data are completely presented in Annex 3 of the PDD.	☑	☑
B.6.3.3. Is the data provided in this section consistent with data as presented in other chapters of the PDD?	1, 2	The emission factor of the defined grid and annual emission reductions are consistent with the figures in other chapters of the PDD, for instance with chapter A.4.4 – where the estimated amount of emission reductions is described.	☑	☑
B.6.4. Summary of the ex-ante estimation of emission reductions				

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
B.6.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	1, 2	As demonstrated in the PDD, being a hydropower plant, the project emission is much lower than the baseline emission.	☑	☑
B.6.4.2. Is the form/table required for the indication of projected emission reductions correctly applied?	1, 2	Yes, the table is complete; it includes the emission due to the project activity, baseline emission, leakage emission and the overall emission reduction.	☑	☑
B.6.4.3. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	1, 2	Yes, the ex ante estimate of emission reductions due to the project is calculated for a first crediting period of 7 years starting with the expected start of operation of the plant in January 2009.	☑	☑
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, the data is consistent with other parts of the PDD, e.g. table A.4.4 describing the estimated amount of emission reductions.	☑	☑
B.7. Application of the monitoring methodology and description of the monitoring plan				
B.7.1. Data and parameters monitored				
B.7.1.1. Is the list of parameters presented by chapter B.7.1 considered to be complete with regard to the requirements of the applied methodology?	1, 2	Because the ex-ante approach is adopted, the net electricity fed to the grid and the electricity use of the project power plant supplied by the grid is required to be monitored. Both parameters have been included in table B.7.1 in the PDD.	☑	☑
B.7.1.2. Parameter Title: Electricity supplied to the grid	1, 2	Monitoring Checklist / Yes / No: Title in line with methodology? Yes; Data unit correctly expressed? Yes; Appropriate description of parameter? Yes; Source clearly referenced? Yes; Correct value provided for estimation? Yes; Has this value been verified? Yes; Measurement method correctly described? Yes	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Correct reference to standards? — Yes Indication of accuracy provided? — Yes QA/QC procedures described? — Yes QA/QC procedures appropriate? — Yes		
B.7.1.3. Parameter Title: Quantity of steam produced (for geothermal projects only)	1, 2	Monitoring Checklist — Yes / No Title in line with methodology? — Yes Data unit correctly expressed? — Yes Appropriate description of parameter? — Yes Source clearly referenced? — Yes Correct value provided for estimation? — Yes Has this value been verified? — Yes Measurement method correctly described? — Yes Correct reference to standards? — Yes Indication of accuracy provided? — Yes QA/QC procedures described? — Yes QA/QC procedures appropriate? — Yes	☑	☑
B.7.1.4. Parameter Title: Fraction of CO_2 in steam produced (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	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Indication of accuracy provided? N.A QA/QC procedures described? N.A QA/QC procedures appropriate? N.A		
B.7.1.5. Parameter Title: Fraction of CH_4 in steam produced (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.7.1.6. Parameter Title: Quantity of steam generated during well testing (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	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		QA/QC procedures described? N.A QA/QC procedures appropriate? N.A		
B.7.1.7. Parameter Title: Fraction of CO_2 in steam during well testing (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.7.1.8. Parameter Title: Fraction of CH_4 in steam during well testing (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	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		QA/QC procedures appropriate? — N.A		
B.7.1.9. Parameter Title: CO_2 emission coefficient of fuel used by the geothermal plant (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.7.2. Description of the monitoring plan				
B.7.2.1. Is the operational and management structure clearly described and in compliance with the envisoned situation?	1, 2	No. **Corrective Action Request No.8.** Please add a clear and detailed operational and management structure to the revised PDD.	**CAR 8**	☑
B.7.2.2. Are responsibilities and institutional arrangements for data collection and archiving clearly provided?	1, 2	Yes. According to the PDD, the project owner is responsible for operation and monitoring of the two backup meters, while the Grid Company is responsible for operation and monitoring of the two main meters. Both guarantee that the measuring equipments are in good operation and completely sealed.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
B.7.2.3. Does the monitoring plan provide current good monitoring practice?	1, 2	Yes, the monitoring is done according to the Technical Administrative Code of Electric Energy Metering (DL/T448－2000) and thus meets current good monitoring practice. The electric energy metering equipment will be properly configured, and the metering equipment will be checked by both the project owner and the grid company before the project starts operation. . **Corrective Action Request No.9.** Please indicate the accuracy of the metering instruments in the second table in B.7.1.	**CAR 9**	☑
B.7.2.4. If applicable: Does annex 4 provide useful information enabling a better understanding of the envisoned monitoring provisions?	1, 2	Yes, Annex 4 does contain a sketch map of meters locations.	☑	☑
B.8. Date of completion of the application of the baseline study and monitoring methodology an the name of the responsible person(s)/entity(ies)				
B.8.1. Is there any indication of a date when the baseline was determined?	1, 2	Yes, the date of completion of the baseline study and monitoring methodology is 29/05/2007.	☑	☑
B.8.2. Is this consistent with the time line of the PDD history?	1, 2	Yes. Version 2.0 of the PDD was also finalized on 2007-05-29.	☑	☑
B.8.3. Is the information on the person(s) / entity(ies) responsible for the application of the baseline and monitoring methodology provided consistent with the actual situation?	1, 2	Alex Yang, Andrea Camponogara, Grace Guan and other persons determined the monitoring methodology. Contact details are provided in the PDD. Andrea Camponogara and Grace Guan were present at the on-site audit and could be interviewed.	☑	☑
B.8.4. Is information provided whether this person / entity is also considered a project participant?	1, 2	The above mentioned persons are not project participants.	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
C. Duration of the project activity / crediting period					
C.1. Duration of the project activity					
C.1.1.	Are the project's starting date and operational lifetime clearly defined and reasonable?	1, 2	Yes, the project starting date in the GSP PDD is 01/11/200 which is the date the start of construction is expected to take place. The operational lifetime is expected to be 30 years.	☑	☑
C.2. Choice of the crediting period and related information					
C.2.1.	Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	1, 2	The life time of the project is 30 years. Confirming with the provided evidence, such as purchasing contract and the business plan, the validator has the confidence that it's reasonable. Therefore the crediting period of 7 years with potential for 2 renewals is chosen as the crediting period.	☑	☑
D. Environmental impacts					
D.1. Documentation on the analysis of the environmental impacts, including transboundary impacts					
D.1.1.	Has the analysis of the environmental impacts of the project activity been sufficiently described?	1,2, 8, 9,	Yes, the environmental impacts of the project activity during construction and operation period have been clearly described.	☑	☑
D.1.2.	Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been approved?	1,2, 8, 9,	Yes, EIA is a must in P.R. China for new hydro power projects. An Environmental Impact Assessment (EIA) was carried out which was approved by Sichuan Environment Protection Bureau, on 27th March, 2006.	☑	☑
D.1.3.	Will the project create any adverse environmental effects?	1,2, 8, 9,	It could be checked by document review onsite that the impacts assessed in the EIA on Ambient Air, Aquatic Environment, Acoustic Environment, Solid Waste, Soil and Water Loss, Ecosystem	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Land Utilization and Immigration are sufficiently dealt with.		
D.1.4. Were transboundary environmental impacts identified in the analysis?	1,2, 8, 9,	The proposed hydropower plant is located within China, and it has no transboundary environmental impacts; hence this section is not applicable.	☑	☑
D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party				
D.2.1. Have the identified environmental impacts been addressed in the project design sufficiently?	1,2, 8, 9,	Yes, the identified environmental impacts have been addressed in the project design sufficiently.	☑	☑
D.2.2. Does the project comply with environmental legislation in the host country?	1,2, 8, 9,	Yes, it does.	☑	☑
E. Stakeholders' comments				
E.1. Brief description how comments by local stakeholders have been invited and compiled				
E.1.1. Have relevant stakeholders been consulted?	1, 2, 18-23	Yes, the project owner had distributed questionnaires to local residents who may be impacted by the project to collect advice for the project and received 51 filled questionnaires	☑	☑
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	1, 2, 18-23	Yes, in order to make the potential stakeholders to receive information of the meeting, the project owner published a bulletin for the meeting of stakeholders on the newspaper of *Mianyang Daily* on Dec. 27, 2006, and also publicized the meeting bulletin via the website of www.tqcdmchina.com	☑	☑
E.1.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation	1, 2, 18-	There are no regulations/laws in China for carrying out the stakeholder consultation process for this project activity.	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
	process been carried out in accordance with such regulations/laws?	23			
E.1.4.	Is the undertaken stakeholder process that was carried out described in a complete and transparent manner?	1, 2, 18-23	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, 20	Yes, the summary of the Stakeholders Consultancy Meeting, dated on 28th Dec., 2006.	☑	☑
E.3. Report on how due account was taken of any comments received					
E.3.1.	Has due account been taken of any stakeholder comments received?	1, 2, 18-23	Given the generally positive (or neutral) nature of the comments received, no corrective action is necessary in response.	☑	☑
F. Annexes 1 - 4					
Annex 1: Contact Information					
F.1.1.	Is the information provided consistent with the one given under section A.3?	1, 2	Yes, it is.	☑	☑
F.1.2.	Is the information on all private participants and directly involved Parties presented?	1, 2	NA	☑	☑
Annex 2: Information regarding public funding					
F.1.3.	Is the information provided on the inclusion of public funding (if any) in consisten-	1, 2	No public funding is involved in this project activity	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
	cy with the actual situation presented by the project participants?				
F.1.4.	If necessary: Is an affirmation available that any such funding from Annex-I-countries does not result in a diversion of ODA?	1, 2	NA	☑	☑
Annex 3: Baseline information					
F.1.5.	If additional background information on baseline data is provided: Is this information consistent with data presented by other sections of the PDD?	1, 2	Yes, the information is consistent with data presented by other section of the PDD.	☑	☑
F.1.6.	Is the data provided verifiable? Has sufficient evidence been provided to the validation team?	1, 2	Yes, it is.	☑	☑
F.1.7.	Does the additional information substantiate / support statements given in other sections of the PDD?	1, 2	Yes, it does.	☑	☑
Annex 4: Monitoring information					
F.1.8.	If additional background information on monitoring is provided: Is this information consistent with data presented in other sections of the PDD?	1, 2	The sketch map of meters location is given in Annex 4. It is supplementary to PDD chapter B.7.2. Pls. see B.7.2. of the protocol.	☑	☑
F.1.9.	Is the information provided verifiable? Has sufficient evidence been provided to the validation team?	1, 2	Pls. see F.1.8. of the protocol.	☑	☑
F.1.10.	Do the additional information and / or documented procedures substantiate / support statements given in other sections of	1, 2	Pls. see F.1.8. of the protocol.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
the PDD?				

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
Open issue Pls. deliver the LoA issued by China and Germany together with MoC countersigned by project participants to DOE before raising the request of registration.	A.3.2.		The request for registration will only be raised once the LoAs and the MOC were submitted to TÜV SÜD.
Corrective Action Requests			
Corrective Action Request No.1. Please add the revision history of PDD versions. The completing date should be written into DD/MM/YY.	A.1.2.	Ver. 3.0 Date: 30/10/2007 Revision History of the PDD Version / Date / Comments Version 1.0 / 22 January 2007 / Complete version of the PDD proval process Version 2.0 / 29 May 2007 / Revised draft PDD; prepared Version 3.0 / 30 October 2007 / Revised PDD according to D	This part has been verified in the revised PDD by the assessment team. **Issue is considered to be resolved. ☑**
Corrective Action Request No.2. To increase transparency, please clearly describe the GPS data of both the powerhouse and the dam site.	A.4.1.1.	The exact location of the powerhouse is at the longitude of 104°42′41″E and latitude of 31°37′45″N. The exact location of the dam is at the longitude of 104°42′10″E and latitude of 31°39′20″N.	This part has been verified in the revised PDD by the assessment team. **Issue is considered to be resolved. ☑**
Corrective Action Request No.3. Please add a time schedule of the project activity into the revised PDD.	A.4.3.10.	The schedule: The Feasible Study Report was finished in April 2005. The project owner who was contacting with Beijing Tianqing Power International CDM Consulting Co.,Ltd decided	This part has been verified in the revised PDD by the

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
		to apply to CDM in directorate on 02/05/2005. The Feasible Study Report has been approved by the Development and Reform Commission of Sichuan Province on 28/07/2005. The Environmental Impact Assessment of the proposed project has been approved by Sichuan Environment Protection Bureau on 27/03/2006. The Preliminary Design Report was finished in September 2006. The CDM stakeholder consultation meeting was organized on 28/12/2006. The project got the Approved by the Development and Reform Commission of Sichuan Province on 13/04/2007. The main construction will be constructed in January 2008. The diversion tunnel will be finished on 31/01/2010. The powerhouse will be finished construction on 31/01/2010. The dam will be finished construction on 31/01/2010. The project will be commissioning on 28/02/2010.	assessment team. **Issue is considered to be resolved. ☑**
Corrective Action Request No.4. Please include the discussion of the emissions from the reservoir in the PDD.	B.3.3.	Since the project's power density is 35W/m^2, which is greater than the threshold of 10W/m^2 specified in ACM0002, and in line with the methodology, CH4 emissions are not considered.	This part has been verified in the revised PDD by the assessment team. **Issue is considered to be resolved. ☑**
Corrective Action Request No.5. To improve transparency, the wording "Grid	B.5.7.	I have revised the PDD and the "Grid price" was revised to "tariff"	This issue has been veri-

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
price" of Table B.3 should be revised to "tariff".			fied in the revised PDD by the assessment team. **Issue is considered to be resolved.** ☑
Corrective Action Request No.6. Since the start of GSP new emission factors were published by the NDRC in August 2007. According to ACM0002, the latest available data shall be used. Therefore please revise section B.6 and Annex 3 accordingly and provide the spreadsheet of the revised emission factor calculation to the assessment team.	B.6.1.2.	We refer to emission factors as published by the Office of National Coordination Committee on Climate Change (i.e. the national DNA) on Dec. 15, 2006.	If considering TUEV´s findings which are approved by the EB of the most recent emissions factor data published by NDRC in August 2007, then those data result in a more conservative emissions factor than that applied in the project activity. Project participants are requested to apply the emissions factor which results after considering TUEV´s findings. Overall applied EF(CM) is lower than NDRC factor, hence can be considered conservative. Issue is considered to be resolved. ☑
Corrective Action Request No.7. A surface area at full reservoir level is 1.54km^2 in A.2. According to ACM0002, the parameter should be added in the revised PDD.	B.6.2.10	Data / Parameter: *SRA* Data unit: km^2 Description: Surface area at full reservoir level Source of data used: Preliminary Design Report	This part has been verified in the revised PDD by the assessment team. **Issue**

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
		Value applied: 1.54 Justification of the choice of data or description of measurement methods and procedures actually applied : The surface area was calculated using the design schematics and area maps. Photographs of the reservoir at several key locations will be taken when the project becomes operational to check whether the actual reservoir does not deviate substantially for the design. Any comment: To calculate power density	**is considered to be resolved. ☑**
Corrective Action Request No.8. Please add a clear and detailed operational and management structure in the revised PDD.	B.7.2.1.	I have add a diagram of operational and management structure in PDD.	This issue has been verified in the revised PDD by the assessment team. **Issue is considered to be resolved. ☑**
Corrective Action Request No.9. Please indicate the accuracy of the metering instruments in the second table in B.7.1.	B.7.2.3.	I have added the accuracy of the meter.	This issue has been verified in the revised PDD by the assessment team. **Issue is considered to be resolved. ☑**
Clarification Requests			
Clarification Request No. 1. The purchase agreements of the key equip-	A.4.3.3	By now the project owner doesn't purchase the turbine and generator.	As the project start is only in January 2008, this answer may be accepted.

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
ments (turbine and generator) are not available on-site. Please deliver this evidences to the TUEV SUED assessment team.			**Issue is considered to be resolved. ☑**
Clarification Request No. 2. Please provide an IRR spreadsheet in English.	B.5.11.	I have delivered the IRR spreadsheet to DOE.	The IRR spreadsheet has been checked by the assessment team. **Issue is considered to be resolved. ☑**
Clarification Request No. 3. Please provide the evidences for many difficulties in obtaining a bank loan and for uncertainty of Grid Price.	B.5.14	I think that Investment analysis can fully demonstrate and explain the additionality of the proposed project, so I did not add the Barriers analysis in this section.	The additionality was evidenced via the benchmark analysis. The barrier analysis only substantiates the benchmark analysis. **Issue is considered to be resolved. ☑**
Clarification Request No. 4. Supporting documentation for the statements should be provided. Please give evidence why the common practice analysis is limited to plants that have been commissioned after 2000, with a capacity of 45 – 70MW? Why is it limited to this specific region (and not to the grid)?	B.5.16	According to Standard for ***Classification and Flood control of Water resources and Hydroelectric Project*** (Document No. SL252-2000), the hydropower project with the total installed capacity greater the 50MW and less than 300MW are classified into middle hydropower project in China. Considering the similar investment scale, the activities similar to the project activity are limited to those hydropower projects with installed capacity larger than 50MW and less than 100MW. The Central China Grid is a larger regional grid, which consists of six sub-grids: Chongqing, Sichuan, Henan, Jiangxi, Hubei and Hunan Grids. The investment environment is incomparable among provinces. So Sichuan Province is regard as a	Answer is retraceable**. Issue is considered to be resolved.** ☑

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
		similar investment region. So the basic information concerning existing hydropower stations similar to the proposed activity (recently constructed or under construction with installed capacities between 50MW to 100MW) in Sichuan Province in operation since the year 2000 is provided in Table B.4.	

Industrie Service

Annex 2: Information Reference List

Reference No.	Document or Type of Information
1.	Project Design Document for CDM project "Sichuan Jiangyou Longfeng Hydropower Station", version 2.0; May 29, 2007, Final PDD: Version 6, 29/07/2008.
2.	Consolidated baseline methodology for grid-connected electricity generation from renewable sources, ACM0002, version 6
3.	Tool for the demonstration and assessment of additionality, version 04
4.	Participant list of on-site interview, signed on 26th July, 2007
5.	On-site interviews at the project site in the office of Sichuan Jiangyou Longfeng Hydro Power Co., Ltd of Jiangyou city in Sichuan, China., conducted on 26th-27th July 2007 by auditing team of TÜV SÜD: Validation team: Mr. Sebastian Randig — CDM Auditor, TUV SÜD Industrie Service GmbH Ms. Xuemei Li — CDM Auditor, Jiangsu TÜV Product Service, China Interviewed persons: Mr. Shen Zemin — General Manager, Sichuan Jiangyou Longfeng Hydro Power Co., Ltd. Mr. Cheng Fangping — Director of the office, Sichuan Jiangyou Longfeng Hydro Power Co., Ltd. Mr. Yang Guoan — General Engineer, Sichuan Jiangyou Longfeng Hydro Power Co., Ltd. Mr. Lin Feng — Vice Director of the office, Sichuan Jiangyou Longfeng Hydro Power Co., Ltd. Mr. Andrea Rumiz — Commercial Manager, Enecore Carbon Ltd Mr. Joachim Binder — Senior Manager Civil Engineerring Department, Kelag Ms. Katja Brusinski — Manager Climate Protection Carbon Credit Procurement, RWE Power AG Mr. Philipp Weiss — Manager Climate Protection Carbon Credit Procurement, RWE Power AG Ms. Yang Jingqiu — Vice general manager, Beijing Tianqing Power International CDM Consulting Co., Ltd. Mr. Jiang Dongkui — Documentation Dept. Manager, Beijing Tianqing Power International CDM Consulting Co., Ltd. Mr. Yang Maohua — General Engineer, Jiangyou City Environmental Protection Bureau Mr. Gao Zhiqiang — Vice Alcalde, Jiangyou City Longfeng County
6.	Feasibility Study Report for CDM project "Sichuan Jiangyou Longfeng Hydropower Station", Issued by Sichuan University Engineering Design Institute, dated April, 2005.

Reference No.	Document or Type of Information
7.	Approval of the FSR for Sichuan Jiangyou Longfeng Hydropower Station, issued by the Development and Reform Commission of Sichuan Province, file No., Chuan Fa Gai Neng Yuan[2005]392#, on 28th July 2005
8.	The EIA of Sichuan Jiangyou Longfeng Hydropower Station, issued by Sichuan Province Environmental Protection Science Institute, dated Feb. 2006
9.	The Approval for the EIA of Sichuan Jiangyou Longfeng Hydropower Station, issued by Sichuan Environment Protection Bureau, file No., Chuan Huan Jian Han [2006]102#, dated on 27th March, 2006.
10.	The summary of the stakeholders meeting, issued by Sichuan Jiangyou Longfeng Hydro Power Co., Ltd, dated on 28th Dec. 2006
11.	The questionnaires of the stakeholders consulting
12.	The participants list of the stakeholders meeting, dated on 27th Dec. 2006
13.	The schedule of Longfeng Hydropower station
14.	Pictures of the stakeholders meeting
15.	Newspaper the stakeholders meeting informed on, dated 25th Dec. 2006
16.	Directorate Decision of Sichuan Jiangyou Longfeng Hydro power Co., Ltd. (evidence for CDM consideration before construction), dated on November 17, 2006
17.	The Approval for connection to Sichuan Grid of Sichuan Jiangyou Longfeng Hydropower Station, issued by Sichuan Province Power Company, file No., Chuan Dian Ying Xiao [2006]196#, on 20th Dec. 2006
18.	Loan Promise letter, issued by China Agriculture Bank Sichuan Branch, dated on 21st Nov. 2006
19.	Assessment Opinions on the Construction of Sichuan Jiangyou Longfeng Hydropower Station, issued by Jiangyou City, dated on 28th Dec. 2006
20.	Investment Estimation protocol of Sichuan Jiangyou Longfeng Hydropower Station, dated on April 2007
21.	Supplement agreement of the construction of Sichuan Jiangyou Longfeng Hydropower Station, signed by Sichuan Jiangyou Longfeng Hydro Power Co., Ltd. and Sichuan Province Jiangyou City Government, dated on 19th Sep. 2006
22.	Assessment Report of the Earthquake Risk of the Construction Site of Sichuan Jiangyou Longfeng Hydropower Station, issued by Sichuan Saisite Technology Co., ltd. dated in July 2007
23.	Approval on the Assessment Report of the Earthquake Risk of the Construction Site of Sichuan Jiangyou Longfeng Hydropower Station, issued by Sichuan Earthquake Bureau, file No., Chuan Zhen Fa Fang [2005]29#, dated on 5th July 2005
24.	Notice of adjusting the Middle China grid price, issued by National Development and Reform Committee, file No., [2006] 145#, dated on 29th June 2006
25.	Approval on the Report of Water Resources Utilization of Sichuan Jiangyou Longfeng Hydropower Station, issued by Sichuan Hydro

Reference No.	Document or Type of Information
	Utilization Bureau, file No., Chuan Shui Han [2005]303#, dated on 23rd May 2005
26.	Approval on the Report of the Demonstration of the Flood-discharge and the Assessment of the Stability of the River of Sichuan Jiangyou Longfeng Hydropower Station, issued by Sichuan Province Hydro Utilization Bureau, file No., Chuan Shui Han[2005]272#, dated on 8th May 2005
27.	Approval for migrants Allocation Scheme of Sichuan Jiangyou Longfeng Hydropower Station by Jiangyou People's Government, issued by Jiangyou City People's Government, file No., Jiang Fu Han[2005]6#, dated on 10th March 2005
28.	Confirmation letter of migrants Allocation Scheme of Sichuan Jiangyou Longfeng Hydropower Station by Jiangyou People's Government, issued by Jiangyou City People's Government, file No., Jiang Fu Han[2006]252#, dated on 18th Dec. 2006
29.	Comments on Preliminary Auditing of the land utilization of Sichuan Jiangyou Longfeng Hydropower Station, issued by Sichuan Province National Land Resource Bureau, file No., Chuan Guo Tu Zi Han [2005]690#, dated on 7th June 2005
30.	Notice of approval on the preliminary work starting of Sichuan Jiangyou Longfeng Hydropower Station, issued by Sichuan Province Development and Reform Committee, dated on 26th Nov. 2004
31.	The temporary method of economy evaluation on electricity project technology reform projects, issued by China Electricity Publishing Company, dated in March 2003
32.	The hardcopy evidences for the common practice analysis of the projects "Hongyanzi, Hongye, Yangcun and Yongle'' and ''the tariff for Hongye second level". http://stockxp.com/info/shzqb/2006/12/23/600505-1.htm; http://www.upper.cn/westdatadetail.asp?id=12186; http://www.zgn-chd.com/guanywmen/index.htm; http://www.zgn-chd.com/gongcjshe/; http://www.scpi.gov.cn/zcfg/zcfg-content.asp?id=1057; http://www.lpia.org.cn/intro/ShowArticle.asp?ArticleID=145; http://www.lpia.org.cn/intro/ShowArticle.asp?ArticleID=145; http://baike.baidu.com/view/667876.htm
33.	The evidence for tariff: the inform of transmitting "the inform of adjusting the tariff of the Central China Power Grid by NDRC", issued by Sichuan Province Price Bureau, file No., Chuan Jia Fa 145#(2006), dated 29th June 2006
34.	The evidence for GSP data of Dam and Powerhouse, "the assessment report on the earthquake safety of Jiangyou City Longfeng Hydropower Station Project Site, issued by Sichuan Saisite Technology Co., Ltd, dated July 2005
35.	The proof for the construction starting date (Mar. 2008), issued by Sichuan Jiangyou Longfeng Hydro Power Co., Ltd., dated 10th Dec. 2007
36.	IRR calculation spreadsheet of Longfeng without CERs, submitted on 25th Dec. 2007
37.	EF calculation spreadsheet of EF, submitted on 25th Dec. 2007
38.	The financial analysis section from the initial design report with the note of the data used

Reference No.	Document or Type of Information
39.	The Initial Design Report of “Sichuan Jiangyou Longfeng Hydropower Station”, issued by Sichuan Province Neijiang institute of water conservancy and electric power, construction survey and design, dated Sep. 2006
40.	The approval of Initial Design Report, issued by Sichuan Province Development and Reform Commission, file No., Chuan Fa Gai Neng Yuan Han 769# [2006], dated 9th Nov. 2006
41.	The approval of the project “Sichuan Jiangyou Longfeng Hydropower Station”, issued by Sichuan Province Development and Reform Commission, file No., Chuan Fa Gai Neng Yuan Han 127# [2007], dated 13th April 2007
42.	Financial Supplementary Report of Sichuan Jiangyou Longfeng Hydropower Station, issued by Sichuan Province Neijiang Institute of Architectural Design & Water Resources & Hydropower Research, dated Nov. 2006
43.	The board decision and the translation of CDM consideration, dated 17th Nov. 2006
44.	The Investment Budget Supplementary Report of Sichuan Jiangyou Longfeng Hydropower Station, issued by Sichuan Province Neijiang Institute of Architectural Design & Water Resources & Hydropower Research, dated Nov. 2006
45.	Approval of Financial Supplementary Report and Investment Budget Supplementary Report of Sichuan Jiangyou Longfeng Hydropower Station, issued by Jiangyou City Development and Reform Bureau, file No., Jiang Fa Gai [2006] 318#, dated 12th Nov. 2006.
46.	Classification and Flood control of Water resources and Hydroelectric Project (Document No. SL252-2000).