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Gold Standard Validation Report

CLIMATE BRIDGE LTD.

VALIDATION OF THE GS VER RETROACTIVE
REGISTRATION PROJECT
QIELONG 1.2MW HYDRO POWER PROJECT

REPORT No. 600500744-GS v1

21 JUNE 2012

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



Report No.	Date of first issue	Revision No.	Revision Date	Certificate No.
600500744	07-12-2011	5	21-06-2012	-
Subject: Validation of a GS-VER Project, version GSv1				
Accredited TÜV SÜD Unit: TÜV SÜD Industrie Service GmbH Certification Body "climate and energy" Westendstrasse 199 80686 Munich Germany			TÜV SÜD Contract Partner: TÜV SÜD Industrie Service GmbH Carbon Management Service Westendstr. 199 80686 Munich Germany	
Project Participant(s): Climate Bridge Ltd. (Client) 91-93 Buckingham Palace Road, London, SW1W 0RP, UNITED KINGDOM			Project Site(s): Downstream of Qielong Gully, a branch of Daxia River in Madang Township, Xiahe County, Gannan Tibetan Autonomous Prefecture, Gansu Province. GPS coordinates: 102.8100°E; 35.3278°N	
Project Title: Qielong 1.2MW Hydro Power Project				
Applied Methodology / Version: ACM0002/Version 12.3			Scope(s): 1 Technical Area(s): 1.2	
First PDD Version (GSP): PDD version date: 23-12-2010 Version No.: 01 Starting Date of GSP 04-07-2011			Final PDD version: PDD version date: 19-06-2012 Version No.: 05	
Estimated Annual Emission Reduction:			4,843 tCO ₂ e	
Assessment Team Leader: Mr. Maharjan, Bhai Raja Assessment Team Member: Mr. Zhe, Jiang (Eric)			Technical Review: Mr. Robert Mitterwallner Responsible Certification Body: Mr. Kleiser, Thomas	
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 Gold Standard requirements. Hence TÜV SÜD will recommend the project for registration by the Gold Standard. ☐ 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 Gold Standard and will inform the project participants and the Gold Standard on this decision.				



Abbreviations

AM	Approved Methodology
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CER	Certified Emission Reduction
CR / CL	Clarification Request
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission Reduction
ERPA	Emission Reductions Purchase Agreement
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GS	Gold Standard
GS-TAC	Gold Standard Technical Advisory Committee
IPCC	Intergovernmental Panel on Climate Change
IRL	Information Reference List
IRR	Internal Rate of Return
KP	Kyoto Protocol
MP	Monitoring Plan
NRB	Non-Renewability fraction of Biomass
NGO	Non Governmental Organisation
PDD	Project Design Document
PP	Project Participant
SDM	Sustainable Development Matrix
TÜV SÜD	TÜV SÜD Industrie Service GmbH
VER	Verified Emission Reductions/Voluntary Emission Reduction
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 Gold Standard (GS) version 1. Validation is part of the GS project cycle and results in a conclusion by the executing DOE whether a project activity is valid and should be submitted for registration to the Gold Standard Technical Advisory Committee (GS-TAC). The ultimate decision on the registration of a proposed project activity rests with the GS-TAC.

The project activity covered by this validation report has been submitted under the project title:
“Qielong 1.2MW Hydro Power Project”

1.2 Scope

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

- The Gold Standard Technical Advisory Committee (GS-TAC)
- Guidance and decisions provided by GS-TAC
- The Kyoto Protocol, in particular § 12 and modalities and procedures for the CDM
- CDM and/or GS-VER approved Baselines and Monitoring methodologies (including GHG inventories)
- Decisions and specific guidance by the CDM-EB published under <http://cdm.unfccc.int>
- Management systems and auditing methods
- Environmental issues relevant to the sectoral scope applied for
- Applicable environmental, social impacts, and aspects of CDM project activity
- Sector specific technologies and their applications
- Current technical and operational knowledge of the specific sectoral scope and information on best practice

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

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

The purpose of a validation is to demonstrate compliance or non-compliance of the project with all stated and valid GS requirements. Additionally, the purpose of validation is to enable the registration of GS projects, which is only a part of the total GS retroactive registration project cycle.

2 METHODOLOGY

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

- Gold Standard Validation and Verification Manual for VER projects as defined for GS version 01.
- The “Clean Development Mechanism Validation and Verification Manual” version 1.2

The process begins with the appointment of the validation or audit team covering the technical and/or sectoral scope(s) and relevant host country experience for evaluating the GS project activity. Once the project is made available for the stakeholder consultation process, members of the team carry out the desk review, follow-up interviews, resolution of issues identified, and finally preparation of the validation report. The prepared validation report and other supporting documents then undergo an internal quality control at TÜV SÜD Certification Body (CB) - “Climate and Energy” - before submission to the GS-TAC.

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

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

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

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

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

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

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

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

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

2.1 Appointment of the Assessment Team

According to the technical scopes and experiences in the sectoral or national business environment, TÜV SÜD has composed a project team in accordance with the appointment rules of the TÜV SÜD certification body "climate and energy".

The composition of an assessment team has to be approved by the Certification Body (CB) to assure that the required skills are covered by the team. The CB TÜV SÜD operates the following qualification levels for team members that are assigned by formal appointment rules:

- Assessment Team Leader (ATL);
- Validator (V);
- Validator Trainee (T);
- Technical Expert (TE).

It is required that the sectoral scope(s) and the technical area(s) linked to the methodology and project have to be covered by the assessment team.

Assessment Team:

Name	Qualification	Coverage of scope	Coverage of technical area	Coverage of financial aspect	Host country experience
Mr. Maharjan, Bhai Raja	ATL	☒	☒ (1.2)	☒	-
Mr. Zhe, Jiang (Eric)	V	☒	☒ (1.2)	☒	☒

Technical reviewer:

- Mr. Robert Mitterwallner

2.2 Review of Documents

The first version of the PDD was submitted to the DOE in *June 2011* (IRL 01). The first PDD version submitted by the PP and additional background documents related to the project design and base-line have been reviewed to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources (if available) has been done as initial step of the validation process. A complete list of all documents and proofs reviewed is attached as annex 2 to this report (Information Reference List).

2.3 Follow-up Interviews

During 09-07-2011 to 10-07-2011, TÜV SÜD conducted interviews during the on-site visit with project stakeholders to confirm relevant information, and to resolve issues identified in the first document review. The following table provides a list of all persons interviewed in this context. An expanded list including some end users is provided in annex 2.

Name	Function / Organisation
Zhang Lei (Mr.)	Officer, Environment Protection Bureau of Xiahe County
Wu Jian (Mr.)	Resident, Dazhuang Village
Tang Xuewu (Mr.)	Staff, Qielong Hydropower Station
Wang Chaoming (Mr.)	Head, Qielong Hydropower Station
Chen Rui (Mr.)	Project Manager, Xiahe Xingxin Hydropower Development Co., Ltd.
Yu Liang (Mrs.)	Project Manager, Climate Bridge Ltd.
Xu Chen (Mrs.)	Project Manager, Climate Bridge Ltd.

2.4 Further Cross-Check

During the validation process the team makes reference to available information related to similar projects or technologies as the GS project activity. The documentation has also been reviewed against the approved ACM0002 Version 12.3 applied to confirm the appropriateness of formulae and correctness of calculations.

2.5 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation is to resolve the requests for corrective actions, clarifications, and any other outstanding issues which needed to be clarified before TÜV SÜD's conclusion on the project design. The CARs and CRs raised by TÜV SÜD were resolved during communication between the client and TÜV SÜD. To guarantee the transparency of the validation process the concerns raised and responses that were provided are documented in more detail in table 2 of the validation protocol provided in annex 1. In total, 11CARs, 6CRs were raised. After 2 loops of deliberations with the project participants, the audit team was able to resolve all remaining issues of concern. The details of the discussions that transpired between the PP and the audit team and finally culminated to the validation opinion can be followed in table 2 of the validation protocol provided in annex 1 of this report. This led to the revision of the PDD.

The final PDD version submitted *June 2012* (IRL 72) serves as the basis for the final assessment presented here. Changes are not considered to be significant with respect to the qualification of the project as a GS project.

2.6 Internal Quality Control

As final step of a validation activity the final documentation, which includes the validation report, the validation protocol, and the information reference list has to undergo an internal quality control at the CB "Climate and Energy". This means that each report has to be approved either by the head of the CB or the deputy. In situations where either the Head of the CB or his/her Deputy is part of the assessment team, approval can only be given by the either of them not serving on the audit team for the project.

After confirmation by PP, the validation report and relevant documents are submitted to the GS-TAC through the DOE access to the GS registry.

3 GENERAL VALIDATION FINDINGS

The assessment work and the main results are described below in accordance with the VVM reporting requirements. The reference documents indicated in this section and in the validation protocol are provided in Annex 2 (Information Reference List).

3.1 Participation

Project participants are:

- Xiahe Xingxin Hydropower Development Co., Ltd.
- Climate Bridge Ltd.

The participants have confirmed their voluntary participation in the GS project activity (IRL 13). The Host Party to the project activity is P.R. China

3.2 Project Design Document (PDD)

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

TÜV SÜD considers that the guidelines for the completion of the PDD in their most recent version have been followed. Relevant information was provided by the participants in the applicable PDD sections A.3. Completeness was assessed through the checklist included in Annex 1 of this report.

3.3 Project Description

The following description of the project as per PDD was verified during the on-site visit:

The proposed project is located at the downstream of Qielong Gully, a branch of Daxia River in Madang Township, Xiahe County, Gannan Tibetan Autonomous Prefecture, Gansu Province, People's Republic of China. It is a run of river hydropower project with 1.2MW installed capacity (0.8MW and 0.4MW), installing two HID41-WJ-65/HID113-WJ-55 turbines as well as two SFW800-8/1180 and SFW400-8/1180 generators. The project will achieve emission reductions by supplying zero emission electricity to the North West China Power Grid (NWCPG), which is dominated by thermal power according to the recent China Electric Power Yearbook. Therefore, the net generation of the project will displace same amount of electricity of the grid and a certain amount of greenhouse gas (GHG) emissions will be consequently reduced as well. The annual emission reductions are expected to be 4,843 tCO₂e.

The target area, as defined according to the methodology is that the proposed project will further contribute to the regional economy and sustainable development by providing the employment opportunities as well as increasing local tax incomes and decreasing the air pollutant emissions.

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

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

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

3.4 Baseline and Monitoring Methodology

3.4.1 Applicability of the Selected Methodology

It is worthy mentioning that the proposed project is subject to the micro scale GS project according to the project category. However, the PP has confirmed with the GS Office, e.g. email confirmation (IRL 68), that the latest large scale methodology ACM0002 was applied with the proposed project. Compliance with each applicability condition as listed in the chosen baseline and monitoring methodology ACM0002 Version 12.3 has been demonstrated.

The assessment was carried out for each applicability criterion and included, among other checks, a compliance check of the local project setting with the applicability conditions in regard to baseline setting and eligible project measures. This assessment also included the review of secondary sources to demonstrate the compliance with applicability conditions.

The methodology specific protocol, included in Annex 1, documents the assessment process. The results of the compliance check as well as relevant evidence are detailed in the protocol and the information reference list.

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

Emission sources, which are not addressed by the applied methodology, and are expected to contribute more than 1% of the overall expected average annual emission reductions according to Appendix A of the GSv1 VVM, have not been identified.

3.4.2 Project Boundary

The project boundary was assessed considering information gathered from the physical site inspection, interviews, and secondary evidence received on the design of the project.

As indicated in the methodology ACM0002 (Version 12.3), the spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the proposed GS project power plant is connected to, which was correctly identified as North West China Power Grid. The only GHG and emission source included in the project boundary are the CO₂ emissions from the electricity generation in fossil fuel fired power plants that is displaced due to the project activity.

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

- Feasibility Study Report (FSR in short, IRL 9), and
- Approval of Grid Connection (IRL 18), and
- 2009 Baseline Emission Factors for Regional Power Grids in China (IRL 39)

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

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

3.4.3 Baseline Identification

The PDD defines the following baseline scenario:

As per the ACM0002 (Version 12.3) methodology, the baseline is clearly defined for this type of

project activity (i.e. installation of a new grid-connected renewable hydro power plant) as follows: Electricity delivered to the grid by the proposed project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources as reflected in the combined margin (CM) calculation described in the “Tool to calculate the emission factor for an electricity system”.

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

- Feasibility Study Report (IRL 9) and its approval (IRL 12),
- Similar projects found at GS website undergoing validation <http://www.cdmgoldstandard.org>,
- Forbidding Construction of Fossil Fuel Fired Power Plants of or under 135 MW (IRL 44), and
- Provisional Regulations on Construction and Management of Small Thermal Power Generators (IRL 45), eliminating the construction of a fossil-fuel fired plant of a similar size, and

TÜV SÜD has determined that no reasonable alternative scenario has been excluded. Based on the validated assumptions used for project activity calculations, TÜV SÜD considers that the identified baseline scenario is reasonable.

Taking the definition of the baseline scenario into account, TÜV SÜD confirms that all relevant GS requirements, including relevant and/or sectoral policies and circumstances, have been identified correctly in the PDD. A verifiable description of the baseline scenario has been included in the PDD.

TÜV SÜD therefore confirms that:

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

3.4.4 Algorithm and/or formulae used to determine emission reductions

TÜV SÜD has assessed the calculations of project emissions, baseline emissions, leakage, and emission reductions. Corresponding calculations have been carried out based on calculation spreadsheets (IRL 41, 66). The parameters and equations presented in the PDD, as well as other applicable documents, have been compared with the information and requirements presented in the methodology and respective tools. An equation comparison has been made to ensure consistency between all the formulae presented in the calculation files.

The assumptions and data used to determine the emission reductions are listed in the PDD and all the sources have been checked and confirmed.

Based on the information reviewed it is confirmed that the sources used are correctly quoted and interpreted in the PDD. The values presented in the PDD are considered reasonable based on the documentation and references reviewed and the results of the interviews.

The baseline methodology has been applied correctly according to requirements.

The estimate of the baseline emissions are considered correct as the calculations have been reproduced by the audit team with the attainment of the same results.

Detailed information on the verification of the parameters used in the equations is found in annex 1. The algorithms for the determination of the baseline, project, and leakage are discussed in the following sections.

3.4.4.1 Baseline Emissions

The calculation of the baseline emissions followed the procedures described in the methodology ACM0002 Version 12.3. The NWCPG is considered to be the project boundary.

The operating margin emission factor (EF_{OM}) was determined based on the simple OM method. The ex-ante option was chosen for this calculation. The calculation of the build margin emission factor (EF_{BM}) was based on modified methods agreed by the EB, because plant specific data are not available in China. The emission factor of the thermal power plants was calculated by the proportion of the emissions of coal, gas and oil times the emission factor of the best available coal, gas and oil power plant as defined and published by the Chinese DNA. The new thermal capacity installation that exceeded 20% in the last years, for which data was available, was assessed with this factor.

The values of EF_{OM} (1.0246 tCO₂/MWh) and EF_{BM} (0.6433 tCO₂/MWh) in final PDD are adopted from the official publication of the NDRC (released on 02 July, 2009), which were latest available data for the PPs at the commencement of validation.

The value for the combined margin emission factor ($EF_{CM}=0.83395$ tCO₂/MWh) was determined using the weighted average of the EF_{OM} and EF_{BM} using the default values for the factors as described in the methodology (i.e. 0.5 and 0.5 for hydropower projects). As per the methodology, the project does not need to consider leakage or project emissions. As a result, the annual emission reductions equal the annual baseline emissions.

3.4.5 Project Emissions

Since the project is a micro scale project activity, which uses a renewable energy source, the project CO₂ emissions are assumed to be zero.

3.4.6 Leakage

As per the methodology, the project does not need to consider leakage.

3.4.7 Emission Reductions

In summary, the estimation of the baseline emissions; project emissions, leakages and the resulting emission reductions, can be considered to be appropriate.

3.5 Additionality

The additionality of the project has been presented in the PDD using the steps of the tool for the demonstration and assessment of additionality (hereafter: additionality tool), version 5.2.

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

- FSR (IRL 09)
- Economic Evaluation Code for Small Hydropower Projects, SL16-95 (Benchmark, IRL 36)

On site the additionality has been discussed principally with Mr. Chen Rui, Project manager of Xiahe Xingxin Hydropower Development Co., Ltd. Furthermore some documents have been reviewed on-site (for details see annex 2).

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

- Project FSR Approval (IRL 12)
- Board Meeting regarding Carbon Fund dated on August 15, 2007 (IRL 13)
- Emission Reductions Purchase Agreement dated on May 08, 2008 (IRL 17)

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

3.5.1 Prior Consideration of Finances from Carbon Credits

The starting date of the project activity is determined to be the date when the plant construction contract was signed on September 12, 2007 (IRL 15), which is the earliest date at which either the implementation or construction or real action of a project activity begins and also the date of involving important financial expenditures according to the CDM glossary of terms. In order to corroborate this information, the assessment team has reviewed the following documents:

- Board Meeting regarding development with Carbon Fund dated on August 15, 2007 (IRL 13)
- Water Turbine generator units Purchase Contract dated on March 20, 2008 (IRL 16)
- Emission Reductions Purchase Agreement dated on May 08, 2008 (IRL 17)
- Memorandum of Understanding (MoU) signed between the Gold Standard Foundation and Climate Bridge Ltd. for Qielong 1.2MW Hydro Power Project China dated on March 04, 2009 (IRL 21)

The original documents presented have been reviewed and verified based on interviews with the project participants, Mr. Chen Rui, Project manager of Xiahe Xingxin Hydropower Development Co., Ltd. who confirmed above-mentioned activities. Therefore the documents can be considered appropriate to confirm prior consideration of VER income.

3.5.2 Identifications of Alternatives

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

3.5.3 Investment Analysis

The financial calculations have been verified and no mistakes have been found. The PPs use the investment analysis to demonstrate the additionality. The project IRR after tax of the project is 8.46% that is lower the benchmark of 10%, and the financial returns are insufficient to justify the investment.

The parameters used in the PDD and financial calculations have been validated based on a review of the source presented in the PDD, inter alia: FSR. First of all, the period of time between the finalization of the FSR (August 2007) and the investment decision (15 August 2007) is no more than one month. Therefore it can be confirmed that it is unlikely that the input values have significantly changed. Secondly, the audit team confirms that all input data of financial calculation used in the PDD and associated annexes are totally consistent with the FSR (IRL 9), which have been validated on-site. FSR was completed by a qualified third-party Lanzhou Xinrong Hydro & Power Technology Consulting Co., Ltd. and approved by Water Resources Bureau of Ganan Tibetan Autonomous

Prefecture. Thirdly, the audit team confirms that the input values from the FSR are valid and applicable at the time of investment decision on the basis of the local and sectoral expertise.

Furthermore the validation team cross-checked the input data of investment analysis when possible with actual contracts, relevant research and national regulations as well as publicly available information as indicated as follows:

- Total static investment

Total static investment is presumed to be 8,500,000 RMB in the FSR. As well, the total investment is 8,922,400 RMB in the budget. According to Final Account Audit Report for Construction Completion (IRL 46) issued by Gansu Xianda Accounting Firm Co., Ltd. on 03 December 2010, which is a qualified and independent 3rd party. The report shows that the actual expenditures until 30 November 2010 are 9,119,267.87 RMB, about 2.2% higher than the FSR estimate. Therefore, the audit team considers that the estimated static investment cost for the proposed project in FSR is appropriate for the investment analysis.

- Tariff

The tariff of 0.227 RMB/kWh with VAT is applied in the whole operation period of the financial analysis. It is sourced from FSR and is well known at the stage of FSR preparation by qualified third party, Lanzhou Xinrong Hydro & Power Technology Consulting Co., Ltd. According to the "Notification Concerning NWCPG Feed-in-Tariff" issued by NDRC No.1125 [2004] (IRL 47), and "Notification concerning with Feed-in-tariff of the new built hydropower stations in Gansu Province" issued by Gansu Pricing Bureau No.125 [2006] (IRL 48), they both indicated that the feed-in-tariff of the new built hydropower units in Gansu Province is 0.227 RMB/kWh with VAT, regardless of the installed capacity of the project.

The audit team further validated the appropriateness of the tariff by investigating the tariff information of hydropower stations in Gansu Province. According to publicly available information, e.g. the official website of Gansu Pricing Bureau, and UNFCCC, the approved tariffs for hydropower stations in Gansu Province operated after 01/01/2005 are all 0.227 RMB/kWh with VAT, which is in accordance with the tariff policies (IRL 47, 48). As Gansu Pricing Bureau's tariff policy, promulgated in July 11 2006, has regulated that the newly built hydropower projects in Gansu Province should implement the fixed tariff of 0.227 RMB/kWh with VAT (IRL 48), it is almost impossible for the proposed project to get a higher tariff in the operation period.

In addition, the audit team checked EB61, paragraph 78 "Information Note on the Highest Tariffs Applied by the Executive Board in Its Decisions on Registration of Projects in the People's Republic of China" (IRL 49), and found that the "highest tariff" indicated for run-of-river hydropower projects in Gansu Province is 0.227 RMB/kWh with VAT, which is in compliance with the applied value in the FSR.

Therefore, the approved tariff of 0.227 yuan/kWh is considered to reflect the real situation of the proposed project. And the audit team is able to confirm that the estimated tariff in FSR was appropriate and reliable in the financial analysis.

- O&M costs

The annual O&M costs are 205,288 RMB in the FSR, which include repair costs, staff salary & welfare, water resource costs and other costs (administrative expenses, business travel expenses, education & research expenses etc). The parameters of calculating the O&M costs have been cross-checked with Economic Evaluation Code for Small Hydropower Projects, SL16-95 (IRL 36) and various staff welfare policies of China (IRL 52, 53), as well as the actual operation cost in year of 2010 with the payment confirmation of the proposed project (IRL 51), please refer to the following table 3.

Table 3 Breakdown of the annual O&M cost in FSR

Parameter	Value in FSR/PDD	Value cross-checked	Audit team comments
Repair costs	1% of fixed assets value	1% of fixed assets value (IRL 36)	The applied value is reasonable.
Employee number	8	According to the monthly payroll in 2010, the number of employee is 8 from January to March, and 11 from April to December. (IRL 50)	The applied value is conservative.
Annual staff salary and welfare per person	9,000RMB 34% welfare of the salary Total 12,060 RMB	According to the monthly payroll in 2010, the average annual payment of staff is 15,900RMB in 2010. (IRL 50) And the welfare can be cross-checked with Welfare fund: 14% (IRL 52) Pension: 20% (IRL 53)	The applied value is conservative.
Maintenance costs	0.001/kWh	0.001/kWh (IRL 36)	The applied value is reasonable.
Other costs	15 RMB/kW	18~21.6 RMB/kW (IRL 36)	The applied value is reasonable.

Furthermore, according to the detailed statistics of O&M cost in 2010 (IRL 51) have been validated on-site, it showed that the actual expenditures (01/2010-12/2010) are around 200,725.5RMB, 4563.5 RMB lower than the FSR estimate. Actually, the main reason is that the repair costs have been overestimated in the first year. Since the proposed project was put into operation in November, 2009 (IRL 46), as “accrued expense” of the repair cost in the financial analysis is not so much as expected in the beginning. However, the average repair cost was considered throughout the project life during finalizing the FSR in August 2007.

In summary, the assumed O&M costs in the FSR and the PDD is compliance with the regulation of economic evaluation and the real situation in China and therefore, appropriate.

- Operation hours and power output

The annual power generation of 6,050 MWh and the annual operation hours of 5,042h (6050 MWh/1.2MW) are derived from the FSR, which are designed by the qualified third-party based on the historical hydrological data from Xiahe station of 43 years, as well Shuangcheng station of 53 years (IRL 09). The load factor is 57.6% which has been defined ex-ante in the PDD and is calculated through the annual operation hour 5042h divided by 8760. The annual operation hours were determined by an authorized third party ordered by the project owner and the value is also same as that supplied to local government when applying for implementation approval (IRL 12). Hence it is no doubt that the estimate of the load factor is in line with the requirements II .3. a) and b) mentioned in EB48 annex 11.

The estimated net annual power output to the grid is 5,808 MWh which was calculated by considering the coefficient of effective electricity, auxiliary power consumption as well as line losses. The calculation formula is as follows:

Annual power output=power generation * coefficient of effective electricity * (1-auxiliary power consumption rate)*(1-line losses rate), i.e. $5,808=6,050*0.9947*(1-0.5%)*(1-3\%)$

The same has been verified and cross-checked by the following ways:

- The coefficient of effective electricity is estimated to be 0.9947 in the FSR. According to the Economic Evaluation Code for Small Hydropower Projects, SL16-95 (IRL 36), the coefficient of effective electricity ranges from 0.95 to 1.00 for this small scale grid-in power station. In addition, provided that the coefficient of effective electricity is 100% in a conservative manner, the project IRR would be 8.53%, still below the benchmark of 10%;
- The rate of the auxiliary power consumption is estimated to be 1.0% which is in compliance with Chinese Hydroenergy Design Code for Small Hydropower Projects issued by the Ministry of Water Resources of P.R.China (SL76-94, IRL 37). SL76-94 regulates that the range of the auxiliary power consumption rate is 0.5%~1% for small scale hydropower projects. The selection of 0.5% for the project is considered as appropriate.
- Based on 2009 China Electric Power Yearbook page 518 (IRL 42), the comprehensive line losses in Gansu Province is 8.71%. Hence the applied value of 3% is confirmed to be conservative.
- Even with the total amount of power generation (i.e. 6,050 MWh) being applied for the investment analysis, the project IRR after tax (9.05%) remains below the benchmark of 10% and the project is still additional.

Moreover, the assessment team has reviewed the monthly electricity transaction notes provided by local power company to crosscheck with the actual electricity generation and operation hours from Nov 2009 to Nov 2010 (IRL 54). It was found that the actual electricity generation was 1,166,960 kWh, as well the annual operational hours of the proposed project were only 972.5 hours due to the poor water availability, calculated from actual annual output (1,166.96 MWh) divided by the rated capacity of generator of 1.2MW. Both real values were much lower than the estimate in the FSR.

Therefore, the audit team considered the operation hours and electricity generation in the financial analysis are reasonable and conservative.

Benchmark

The benchmark of 10% (project IRR after tax) used for the financial comparison was derived from Economic Evaluation Code for Small Hydropower Projects issued by the Ministry of Water Resources of P.R.China in 1995 (SL16-95, IRL 36). Although the code SL16-95 was published in 1995, its on-going validity has been confirmed by its publisher again in 2008 (IRL 38). The benchmark of 10% has been confirmed against the source, and the suitability for this project can be confirmed due to the definition of small scale hydropower projects (less than 25,000kW) as contained in the applicability conditions of SL16-95. This proves that the benchmark used is adequate for this project.

Tax rates

Income tax rate of 25% and VAT rate of 6% have been reviewed and were found to be appropriate based on Provisional Regulations of the People's Republic of China on Enterprise Income Tax issued by State Council of P.R. China (IRL 55) and Provisional Regulations of the People's Republic of China on Value Added Tax (IRL 56).

In addition, education tax, city maintenance and construction tax have also been checked and were found to be appropriate based on the Code for education tax rate, city maintenance and construction tax rate issued by China State Council (IRL 58).

Salvage value rate

The salvage value rate of the proposed project at the end of 20 years is set as 4.75% of total static investment, which is within the reasonable range of 0-5% regulated by Implementation Details of Provisional Regulations of the P.R China on Enterprise Income tax (IRL 57). Furthermore, even with a 100% salvage value rate, for the proposed project, i.e. salvage value =8,622,453 RMB), the project IRR would be 9.66%, which still below the benchmark of 10%. Therefore, the audit team confirms that the applied salvage value rate is appropriate.

Loan interest rate

The proposed project adopts a post-tax benchmark. The actual interest payable has been taken into account in the calculation of income tax. The long-term loan interest rate of 6.12% are sourced from the FSR and has been found to be the prevailing commercial interest rate in the region at the time of investment decision based on the statistics of loan interest rate from the People's Bank of China (IRL 59). It can be confirmed that the applied one in project income tax calculation is appropriate.

In summary, on the basis of its specific local and sectoral expertise, the financial calculation has been completely checked. All the calculation files were checked and no mistakes have been found. The sensitivity analysis was analyzed in detail, by taking into account 10% variations in total static investment, O&M costs, grid-in tariff and annual net electricity delivered to the grid. The sensitivity analysis of the proposed project shows that even with a 10% variation the benchmark of 10% was never reached. And only the total static investment decreases by 11%, or annual O&M costs decreases by 66%, or grid-in tariff increase by 11%, or annual grid-in electricity increases by 11%, respectively, can the project IRR reach the benchmark rate of 10%. However, none of the described situations above are likely, based on the following documents,

- Final Account Audit Report for Construction Completion (IRL 46);
- Monthly electricity transaction notes from Nov. 2009 to Nov. 2010 (IRL 54);
- Economic Evaluation Code for Small Hydropower Projects issued by the Ministry of Water Resources of P.R.China in 1995 (SL16-95, IRL 36);
- Electricity tariff approval in 2006 and 2009, respectively (IRL 47, 48).

Therefore, the validation team can confirm that the sensitivity analysis has been performed in a transparent manner. The submitted excel spreadsheets (IRL 66) have the readable formulae and unprotected cells, which allow the assessment team to be able to reproduce the analysis and obtain the same results. TÜV SÜD can confirm that the underlying assumptions, parameters and chosen values of financial analysis of the proposed project are appropriate and that the calculations have been performed correctly. The proposed project is considered additional.

3.5.4 Barrier Analysis

Not applicable.

3.5.5 Common Practice Analysis

The region for the common practice analysis has been defined as Gansu Province where the proposed project is located. The project activity's technology can be found in different country regions, where different situations can appear. Hence the region has been defined taken into account the kind of technology and the industry type. The assessment team has reviewed the approach presented in the PDD and can confirm that the relevant parameters as location, infrastructure, economical situation and development has been taken into account in order to define the region to be used for the common practice. Hence the presented region can be considered appropriate for the common practice analysis.

Further on, similar projects are defined as hydropower projects with a capacity of below 10 MW considering that the total capacity of the project activity is 1.2 MW. The audit team considered the applied capacity range as reasonable. And similar project should be installed after 2002, i.e. after the Chinese Power Reform (IRL 62). The consideration of hydropower projects after 2002 is also deemed appropriate since the investment conditions were significantly changed after this reform. The original monopoly of the electricity industry became market-oriented, and it was broken down by the involvement of private enterprises and private funds since 2002. Therefore, TUV SUD considers the defined criteria for similar projects as plausible and appropriate.

The audit team reviewed official sources such as the *China Water Resource Yearbook 2006~2009* (IRL 65), CDM pipeline updated in November 2011 (IRL 63), Chinese DNA and UNFCCC website, which is the latest available official data source of hydropower projects' statistics during the validation. In addition, the audit team made a further cross-check of the information based on the interviews performed during the on-site audit. It was concluded that all hydropower projects with a capacity of below 10 MW that developed after the power reform in 2002 and therefore faced a similar investment environment, are applying for GS-VER or have been registered as CDM projects already. Since all listed projects in PDD were registered as CDM projects, as well applying for carbon funds, there are no similar hydropower projects in Gansu Province.

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

3.6 Monitoring Plan

The monitoring plan presented in the PDD complies with the requirements of the applicable methodology. The assessment team has verified that all parameters in the monitoring plan against the requirements of the methodology; no relevant deviations have been found.

The procedures have been reviewed by the assessment team through document review and interviews with the relevant personnel on-site (IRL 08). This information, together with a physical inspection has allowed the assessment team to confirm that the proposed monitoring plan is feasible within the project design. The relevant points of monitoring plan have been discussed with the PPs. Especially the location of meters, data management, and the quality assurance and quality control procedures to be implemented in the context of the project.

In line with the methodology, besides the installed capacity (CAP_{PJ}) on the nameplate on-site, the key parameter that needs to be monitored ex-post is the net electricity supplied to the grid by the project activity, which will be calculated by the electricity exported to the grid minus the electricity imported from the grid. The electricity is monitored continuously by a national standard bidirectional revenue meter installed in grid interface points, and recorded as monthly report. The accuracy of the meter is 0.5S. The monitoring data is archived electronically and kept during the crediting periods with two years more. The data can be cross checked with the receipts of electricity sales and electricity purchase. The calibration of the meter is once a year following the manufacturer requirements, and carried out by qualified third party according to Chinese Electric Industry Regulation DL/T448-2000 (IRL 60).

In line with the methodology, the parameter EF_{grid} has been calculated ex-ante during the validation (refer to the PDD B.6), and no further monitoring in the first crediting period. As for the parameter TEG, it is for the project with the power density greater than 4 W/m^2 and less than or equal to 10 W/m^2 . Since there is no reservoir found on-site, it is not applicable in the project activity. Thus, both of parameters were not included in the monitoring plan.

The monitoring procedure of the proposed project is in line with the requirements from the applied methodology (ACM0002 Version 12.3). Hence it is expected that the PPs will be able to implement the monitoring plan and the emission reductions achieved can be reported ex-post and verified.

4 GOLD STANDARD CRITERIA

4.1 Project Eligibility Screen

Project Type:

The assessed project belongs to the category Renewable Energy (Small low-impact Hydro, with a size limit of 15MW)

Host Country:

P.R. China, being a signatory to the Kyoto Protocol is considered an eligible Host Country.

Project Size:

Project size is 4,843tCO₂e per year and therefore belongs to the GS category of micro scale projects. It involves that the net generation of the project activity displaces same amount of electricity of the dominant fossil-fuelled power grid and a certain amount of greenhouse gas (GHG) emissions will be consequently reduced.

In addition, the audit team confirms that the project participant has a written statement against de-bundling of the project. (IRL 27)

4.2 Further GS Requirements on Additionality

4.2.1 Previous Public Announcement Check

GS requires that there is no previous public announcement of the project activity even as a normal project without VER components.

The project, in its current design (with the involvement of Climate Bridge Ltd.), has not previously been announced to go ahead as a normal project (even not as a voluntary offset project), prior to any payment being made for the implementation of the project.

This prompted GS to conduct a pre-feasibility assessment of the project in order to determine its eligibility. Implemented with the fast track procedures, the revisions of the proposed project (IRL 20) are summarized in accordance with the pre-assessment feedback of Nanyangshan 1.26MW Hydropower Project (GS 547) for similar installed capacity and location (IRL 19). The discussions and negotiations between the carbon credit buyer Climate Bridge Ltd. and project owner Xiahe Xingxin Hydropower Development Co., Ltd. intensified in late 2007. These discussions were concluded with the signing an Emission Reductions Purchase Agreement - ERPA (IRL 17) between both sides on 6th May and 8th May 2008, respectively.

4.2.2 ODA Additionality Test

Based on the written confirmation with the GS Office, e.g. email communications (IRL 67), that Gold Standard requires an official declaration from the project proponent that no ODA would be diverted to purchase VERs issuing from this project.

The project owner of the Qielong 1.2 MW hydropower station has provided a Declaration of Financier of Non-Use of Official Development Assistance (IRL 35), as well the project financial plan provided (IRL 34), and final account audit report for construction completion (IRL 46) as supporting evidences. These proved therefore, that there was no agreement with any country's government to purchase the VER offsets using ODA funds.

4.3 Conservative Approach Check

According to Gold Standard version 1 requirements, it must be assessed whether a sufficiently conservative baseline scenario is chosen based on the baseline report and by confirming with the local and sectoral expertise during on-site visiting (IRL 08).

The PDD demonstrates that the most conservative baseline scenario has been chosen, and that all assumptions and parameters comply with the conservativeness criteria. To show how the calcula-

tion of emission reductions has been carried out in a conservative manner, the following examples are given:

- The proposed project is subject to the micro scale GS project according to the project category. However, the latest large scale methodology ACM0002 was applied with the proposed project in the view of conservative as the chosen validation project per GS requirements (IRL 68). Compliance with each applicability condition as listed in the chosen baseline and monitoring methodology, ACM0002 Version 12.3 has been well demonstrated in the project activity.
- The proposed project has applied with emission factors (0.83395 tCO₂/MWh) issued in 2009 (IRL 39) in stead of the one (0.84125 tCO₂/MWh) issued in 2010 (IRL 69), on which the validation activity was taken place in China. In addition, the conservative consideration, e.g. "RoundDown/Up" functions, has been well addressed in the calculation of the baseline emissions and project emissions, respectively in the project activity.

Therefore, the audit team confirmed that the project does comply with the methodology and the GS conservativeness principles.

4.4 Technology Transfer and/or Technology Innovation

The project activity does not involve any aspect of technology transfer from an industrialized country, nor an innovation of the domestic technology.

4.5 Sustainable Development Screen

4.5.1 Sustainable Development Assessment

The project has used the sustainable development assessment matrix as required by the Gold Standard version 1. Since the project is micro scale, the total score obtained is +, where the detailed assessment has been in Table 4,

Table 4 Detailed SD Assessment for the project activity

Component Indicators	Score (+,0,-)	Assessment and Conclusion
Local/regional/global environment		
Water quality and quantity*	0	During the construction period, industrial wastewater is treated with sedimentation, and the liquid will then be reused without discharge. Meanwhile, the domestic sewage is also treated and reused for plant greening or for local agriculture irrigation without discharge. During the operational period, the machinery oil and the cleaning wastewater go through oil-water-separation, and then the liquid will be reused for greening or road watering without discharge. Similar with that during the operation period, the domestic sewage at this stage is also treated and reused for plant greening without discharge. Thus, this indicator scores as zero. The audit team confirmed the statement above by reviewing page 54, 55 and 57 of EIA (IRL 10) and EIA Approval (IRL 11), as well as by interviewing with Mr. Zhang Lei as the local EPB officer.

Air quality* (emissions other than GHGs)	0	The air pollution mainly comes from project construction. Proper measures are employed: 1. Rock exploration should be constrained to a minimal size and replant the site as soon as possible. 2. Covering the rocks and powder materials while being transported. 3 Keep doing road sparkling to prevent dust. 4 Storing the powder materials in a shelter with coverage, and protect the on-site workers with masks. By doing so, the pollution can be minimized to the least significant level. During the operation period, the electricity generated by the project partially replaces electricity generation from other conventional sources of energy, directly reducing emissions other than GHG such as SO_x and NO_x. However, such contribution is difficult to qualify or measure, Thus, this indicator scores as zero. The audit team confirmed the statement above by reviewing page 55 of EIA (IRL 10) and EIA Approval (IRL 11), as well as by interviewing with Mr. Zhang Lei as the local EPB officer.
Other pollutants* (Noise pollution and Solid waste)	0	Noise Pollution: Noise mainly comes from the construction machines, concrete casting and transportation vehicles, yet, their operations at night are avoided, and the machines are installed at a furthest location away from human where possible. Regular machine diagnosis is arranged to prevent dysfunctional operation. The workers on-site are also be protected by proper measurements. Meanwhile, the location of the power plant is actually far away from the village. Hence, the noise does no significant affect to local people. So, this indicator scores as zero. Solid Waste: During construction, solid waste mainly includes construction waste as well as domestic rubbish from on-site workers. Construction waste is treated in the spoil ground. Domestic rubbish will be regularly transported to the nearby landfill site for central disposal. The audit team confirmed the statement above by reviewing page 56 of EIA (IRL 10) and EIA Approval (IRL 11), as well as by interviewing with Mr. Zhang Lei as the local EPB officer.
Soil condition* (quality and quantity)	0	A comprehensive soil and water conservation plan is arranged in line with the project construction plan. Besides, considering the small size of the project, land excavation is limited, and following the water and soil conservation plan, all land will be remediated and trees will be planted accordingly afterwards. Thus, this indicator scores as zero. The audit team confirmed the statement above by reviewing page 57 of EIA (IRL 10) and EIA Approval (IRL 11), as well as by interviewing with Mr. Zhang Lei as the local EPB officer.
Biodiversity (species and habitat conservation)	0	The project does not affect the forest ecosystem or wildlife in the surrounding. With the construction of dam, the transparency of the waterbody will be increased and the amount of Plankton volume will be increased accordingly. Thus, the impact to the biodiversity is not significant, and the indicator scores as zero. The audit team confirmed the statement above by reviewing page 43 and 84 of EIA (IRL 10) and EIA Approval (IRL 11), as well as by interviewing with Mr. Zhang Lei as the local EPB officer.
Sub total	0	
Social sustainability and development		
Employment* (including job quality, fulfillment of labor standards)	+	During the construction and operation phases, some temporary and permanent job opportunities are provided, and, relevant trainings are provided to help the employees upgrade their skills and knowledge. Regarding employment quality, regulation is set to guarantee safety working environment and training is provided to new employees. Therefore, this indicator scores as positive. The audit team confirmed the statement above by reviewing the Qielong Hydro Power Station Payroll (IRL 50), as well as by interviewing with the



		local residents.
Livelihood of the poor* (including poverty alleviation, distributional equity, and access to essential services)	+	Poverty Alleviation: A few jobs are available during the construction period and 8 permanent employment opportunities have been created during operation period, most of which are from local community. The average income for permanent employee is about 10000 RMB/year above the average level of 2723.8 RMB/year in rural area of Gansu Province, http://www.stats.gov.cn/was40/gjtjj_detail.jsp?channelid=4362&record=121 The temporary construction worker will earn about 1000 RMB/month. On the other hand, a path leading to the power station has been paved, and a water channel for irrigation has been built up. These give convenience to local villagers. In summary, this indicator scores as positive. The audit team confirmed the statement above by reviewing the statement from local residents concerning social contribution (IRL 70), as well as by interviewing with the local residents.
Access to energy services*	+	Although the project is micro-scale, it helps to release the power supply demanding in Madang township, and pressure on provincial grid to a certain extent. Thus, this indicator scores as positive. The audit team confirmed the statement above by interviewing with the local residents and station staff on-site (IRL 08).
Human and institutional capacity (including empowerment, education, involvement, gender)	0	The local stakeholder consultation for the GS-VER retroactive registration invited both local residents and officers. This helps to improve the local democracy. Meanwhile, one female farmer has been hired to work in the hydro-power station. However, as this indicator is hard to monitor, so scores as zero. The audit team confirmed the statement above by reviewing stakeholder consultation report (IRL 30) and Qielong Hydro Power Station Payroll (IRL 50). Though it may exert a positive score with the plausible argument, the validator confirmed the PP will not further assess on it.
Subtotal	+	
Economic and technological development		
Employment (numbers)*	+	A few jobs are available during the construction period. Totally, 8 permanent jobs are created during the operation period. Training has also been provided to relevant employees. Thus, this indicator scores as positive. The audit team confirmed the statement above by reviewing the Qielong Hydro Power Station Payroll (IRL 50), as well as the training records and arrangement (IRL 24).
Balance of payments (sustainability)	0	No foreign currency or domestic investment involved in the project activity. Thus, this indicator scores as zero. The audit team confirmed the statement above by reviewing the approved FSR (IRL 09), Project Financial Plan (IRL 34). as well as by interviewing with Mr. Chen Rui, as project manager of the project activity.
Technological self reliance (including project replicability, hard currency liability, skills development, institutional capacity, technology transfer)	0	The technology adopted by the proposed project is domestic technology, so technology transfer was not involved in the project activity. Thus, this indicator scores as zero. The audit team confirmed the statement above by reviewing the Wind turbine purchase contract and technical agreement (IRL 16). as well as by interviewing with Mr. Chen Rui, as project manager of the project activity.
Sub total	+	
TOTAL	+	

*The asterisk indicators will be monitored in sustainable development monitoring plan.

In summary, the total score is + for the project activity, where,

- Local/regional/global environment has a subtotal score of 0
- Social sustainability and development has a subtotal score of +
- Economic and technological development has a subtotal score of +

None of the sub-total scores is negative, the total score is positive and none of the indicators has a negative score. All the assumptions used in defining the score values have been reviewed by the audit team based on the desk review of submitted documentations, interviews conducted during the on-site visit undertaken as part of the validation of the project, and the oral confirmation of annual comprehensive review by the local EPA officials. Hence, the project activity complies with this Gold Standard criterion.

The GS Documentation also includes additional parameters (with a positive score) to be monitored to further confirm that it is in line with sustainable development. These parameters are:

- Water Quality and Quantity/Air Quality/Other pollutants/Soil condition. Implementation of the mitigation measures during the construction period will be monitored through the questionnaire in the monitoring plan.
- Employment (including job quality, fulfilment of labour standards, monitored by training reports regarding safety regulations, operation and maintenance for new and existing employees, respectively)
- Livelihood of the poor (including poverty alleviation, monitored by annual income derived from monthly payroll)
- Access to energy services (by electricity invoice)
- Employment (number, monitoring by monthly payroll, and the exact number of employment and relevant training is also available for crosscheck)

These additional parameters will be monitored as outlined in the GS documentation and indicated in the monitoring section of the PDD, even though the sustainable development assessment matrix did not result in any crucial SD indicators. Nonetheless, these five parameters will help verify that the project contributes to sustainable development in the region.

4.5.2 Environmental Impact Assessment (EIA)

In host country (P.R. China), an environmental impact assessment is required for this project according to the legal authority (EPA) that defines projects with mandatory EIA. The project participants had asked Environmental Engineering Institute, Coal Mining Design and Research Academy in Lanzhou, to undertake an environmental impact assessment in August 24 2007 (IRL 10) and got the EIA approval from Gansu Environment Protection Bureau in September 10, 2007 (IRL 11). The assessment team made a document review of the information presented. The EIA approval from local government confirms the correctness of the approach used by the PPs.

On the other hand, the Gold Standard EIA prescreen checklist in Annex 4 did not reveal any negative or critical impacts of the project. The sustainability matrix in Section A.2 does not contain any negative scores; every sub-total and total score is positive. There are also no crucial indicators for an overall positive impact. Furthermore, the Stakeholder Consultation outlined in Section G of PDD according to GS VVM shows that the stakeholders are very positive about the harmless effect of the project. Also, the project site is not located in any of the ecologically sensible zones mentioned in the approved EIA.

In conclusion, the audit team confirms that the PPs have followed the requirements of the host country with regards to addressing environmental impacts, and no significant negative impacts have been identified.

4.5.3 Public Consultation Procedures

The project proponent reported one stakeholder consultation as required for micro scale project by the Gold Standard version 1 (IRL 30 prior to retroactive registration request to the Gold Standard). It is worth mentioning that the project applying for retroactive registration has been conducted the main stakeholder consultation before the validation, as part of the pre-feasibility assessment. The DOE has received Fast-track Revisions for Qielong Micro-scale Hydropower one-page summary (IRL 20) indicating that this has been accomplished.

The lists of participants from the meeting have been included in the PDD. The spectrum of stakeholders invited to attend the meetings can be considered appropriate. This was also confirmed by those who were interviewed during the on site visit. The stakeholders were invited by using a number of methods (IRL 30):

- The most important organizations, NGOs and governmental institutions were invited per emails and letters
- Posters about the meeting were placed at several locations of the surrounding villages.
- For illiterate stakeholders, project participants relayed the invitation verbally
- Finally, the invitation was posted in a local newspaper in Gannan Daily.
- Gold Standard supporters were also invited for virtual input.

A total of 21 stakeholders from local government, NGO community, village residents and power station staff attended the meetings on June 24, 2010. During the consultation activities, the checklist for Social and Environmental Impacts as well as a non-technical summary of the project were translated into local language (Chinese) in written form for better understanding of the Stakeholders. Following the purpose of the consultation was a general description of the project activity. Before concluding with general feedbacks, there was a question and answer sessions and also questions relating to the checklist for Social and Environmental Impacts.

Comments received as part of the consultation activities are summarized in section G.2 of the PDD. Similarly, report how due account was taken of any comments received has been provided in section G.3 of the PDD.

It is worth mentioning that there was a concern on machinery noise that may affect the health of the workers on-site during the construction period of the project activity. Since the project is applying for GS retroactive registration, the main stakeholder consultation on June 24, 2010 was actually conducted after the project has been accomplished in November, 2009. During on-site visiting, the audit team has interviewed with Mr. Zhang Lei, officer of Xiahe County EPB, as local expertise. He confirmed that the noise has been considered during the EIA report development (IRL10). Though the instantaneous noise during construction may higher than the safety threshold (65db at daytime/55db at night), the average monitored noise would be within the safety value. Thus, no significant negative impact of construction noise has been identified in the approved EIA report (IRL 11). In addition, the audit team confirmed that the PP has prepared ear plugs, as well as soundproof office to improve the working environment on-site. As a result, no further negative comments on noise were raised about the project during its operation period.

Therefore, the audit team considered only monitoring the noise during project construction period is appropriate to response the stakeholder's concerns.

A Global Stakeholder Process (GSP) was initiated by TÜV SÜD from 04-07-2011 (IRL 33) and included;

- Making the PDD publicly available on its website
- Inviting all GS supporter organizations, their local representatives and the general public to comment on the project.

The project can be found at the link provided in the table in section 5 below.

4.5.4 Summary Table of Gold Standard Criteria

With reference to the pre-assessment final report of Nanyangshan 1.26MW Hydropower Project (GS 547) for similar installed capacity and location (IRL 19), a summary table (IRL 20) for some mentioned points and a brief explanation of how they have dealt with should be provided in the validation report.

Issue raised in the Pre-feasibility Assessment Report		How the issue has been dealt with
1	Eligibility	-ODA. A clear financial plan is attached in Annex 12 confirming that the project does not make use of ODA for the purchase of VERs. -Pre-announcement check. A shareholder resolution is attached in Annex 12 as the pre-announcement statement. -EIA. The filled Appendix C is attached in Annex 6 with relevant sources.
2	Clarification on Additionality	-Carbon revenues. A shareholder resolution is attached in Annex 12 as the carbon revenues consideration evidence. -Additionality Tool. All steps of the "Tool for the demonstration and assessment of additionality" (version 5.2) are applied and discussed in Section B.3 of the PDD. -Barrier analysis. Feasibility Study Report (FSR) is attached in Annex 10. The data of investment cost, O&M cost and tax rate are mentioned in FSR. -IRR calculation & Sensitivity analysis & Benchmark. An excel sheet with IRR calculation will be uploaded as a confidential Annex 16. Sensitivity parameters are analyzed detailed in Section B.5 of the PDD. The benchmark of IRR is described in Section B.5.
3	Baseline and Project Emission Reductions	-Energy statistics vintage & Baseline conservativeness. The project has chosen Combined margin (CM) as the baseline approach, because the data of the year in which project generation occurs are not public available as explained in Section B.6 of PDD. In this case, the combined margin is a more appropriate baseline given local boundary condition.
4	Sustainable Development Assessment Matrix (SDM).	More detailed description of mitigation measures and relevant impacts is provided for nine indicators including <i>Water quality and quantity, Air Quality, Other pollutants (noise pollution and solid waste), Soil condition, Employment (including job quality, fulfillment of labor standards), Livelihood of the poor, Access to energy services and Employment (numbers)</i>. Relevant sources are provided for all the indicators. The sustainable development assessment matrix is attached in Annex 5.
5	Stakeholder Consultation	A list of all stakeholders invited to the stakeholder meetings, including local NGOs and GS NGO Supporters, a copy of posters/flyers, newspaper articles, e-mails that were used to invite participants to the meetings, a clear list of all meeting attendees, with their signatures and clear contact details, a copy of the non-technical summary of the project handed out at that meeting, a summary of the resulting stakeholder comments and responses provided are included in the Stakeholder Consultation Report as attached in Annex 9.
6	Monitoring	The monitoring plan for sensitive indicators is described in Section B.7, including <i>Water quality and quantity, Air Quality, Other pollutants (noise pollution and solid waste), Soil condition, Employment (including job quality, fulfillment of labor standards), Livelihood of the poor, Access to energy services and Employment (numbers)</i>.
7	Others	Major parts of EIA, FSR and other relevant documents are translated to English.

5 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

TÜV SÜD published the project documents on its website and invited comments from affected Parties, stakeholders, and non-governmental organisations during a 60 day period.

The following table presents all gathered key information:

Webpage: http://www.netinform.net/KE/Wegweiser/Guide2.aspx?ID=7257&Ebene1_ID=49&Ebene2_ID=2424&mode=4	
Starting date of the global stakeholder consultation process: 04-07-2011	
Comment submitted by: None	Issues raised: -
Response by TÜV SÜD: -	

6 VALIDATION OPINION

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

Qielong 1.2MW Hydro Power Project

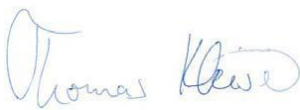
Standard auditing techniques have been used for the validation of the project. Methodology-specific checklists and protocol for the project have been prepared to carry out the audit in order to present the outcome in a transparent and comprehensive manner.

The review of the project design documentation, subsequent follow-up interviews and further verification of references have provided TÜV SÜD with sufficient information to determine the fulfilment of stated criteria in the protocol. In our opinion, the project meets all relevant GS version 1 requirements. Therefore, TÜV SÜD will recommend the project for registration by the Gold Standard Technical Advisory Committee as a Gold Standard VER project activity.

An analysis as guided by the applied methodology demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are additional to any that would have occurred in the absence of the project activity. Given that the project would be implemented as designed, it is likely to achieve the estimated amount of emission reductions of **33,901 tCO₂e** over the seven years crediting period, amounting to a calculated annual average of **4,843 tCO₂e** as specified in the final PDD version.

The validation has been performed following the requirements of the latest version of the GS VVM and on the basis of the contractual agreement. The single purpose of this report is its use during the registration process as part of the GS VER Retroactive project cycle. Based on the work described in this report, nothing has come to our attention that causes us to believe that any project component or issue has not been covered by the validation process.

Munich, 21-06-2012



Mr. Kleiser, Thomas

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

Munich, 21-06-2012



Mr. Maharjan, Bhai Raja

Assessment Team Leader



Annex 1: Validation Protocol

Validation Protocol

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Table 1 Conformity of Project Activity and PDD

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
A. General description of project activity				
A.1. Title of the project activity				
A.1.1.Does the used project title clearly enable to identify the unique CDM activity?	1, 2, 3	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, 3	The GSP version of PDD was indicated as version 01 dated 24/12/2010, and the final PDD as version 05 dated on 19/06/2012.	☒	☒
A.1.3.Is this consistent with the time line of the project's history?	1, 2, 3	Yes, this is consistent with the time line of the project's history.	☒	☒
A.2. Description of the project activity				
A.2.1.Is the description delivering a transparent overview of the project activities?	1, 2, 3	The proposed project is described transparently in the PDD, and the project activities described have been proven during the audit.	☒	☒
A.2.2.What proofs are available demonstrating that the project description is in compliance with the actual situation or planning?	1, 2, 3, 9, 10, 11, 12, 15, 16	The project activity is the displacement of electricity generated by coal fired power plants with electricity generated by the hydro resource power plant. Several evidence (see in the following) for the given project activity have been gathered: • Feasibility Study Report (FSR) and FSR approval • Environment impact assessment (EIA) and EIA approval • General construction contracts • Equipment purchase contracts.	☒	☒
A.2.3.Is the information provided by these proofs consistent with the information provided by the PDD?	Ditto	There is no contradiction between the information provided by these proofs and the PDD.	☒	☒
A.2.4.Is all information presented consistent with details provided by further chapters of the PDD?	Ditto	Yes. All information presented is consistent with details provided by further chapters of the PDD.	☒	☒

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
A.3. Project participants				
A.3.1. Is the form required for the indication of project participants correctly applied?	1, 2, 3	The form is completely correctly applied.	☒	☒
A.3.2. Is the participation of the listed entities or Parties confirmed by each one of them?	1, 2, 3	As the project activity is a VER project, no parties or host country approvals are necessary. The project participants are Xiahe Xingxin Hydropower Development Co., Ltd. (owner) and Climate Bridge Ltd. (Buyer).	☒	☒
A.3.3. Is all information on participants / Parties provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	1, 2, 3	<u>Clarification Request No. 1.</u> The PP is requested to clarify whether Climate Bridge Ltd. as project participant involved in the proposed project, since there is inconsistency in the GS PDD. e.g. A.3 and B.5.	CR	☒
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, 3	The project is on downstream of Qielong Gully, a branch of Daxia River, within the administrative boundary of Madang Township, Xiahe County, Gannan Tibetan Autonomous Prefecture, Gansu Province. <u>Corrective Action Request No.1</u> The PP is requested to indicate the location and GPS coordinates of the project in SI system.	CAR	☒
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, 3, 14, 11, 12	The license issued by Xiahe County Industrial & Commercial Administration Bureau shows that Xiahe Xingxin Hydropower Development Co., Ltd. is legal entity. And the project approval issued by Gannan Tibetan Autonomous Prefecture Water Resource Bureau and the EIA approval issued by Gannan Tibetan Autonomous Prefecture EPA demonstrate that the project proponent can	☒	☒

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		implement the project at this site.		
A.4.2. Category(ies) of project activity				
A.4.2.1. To which category(ies) does the project activity belonging to? Is the category correctly identified and indicated?	1, 2, 3	Yes, the project falls into scope 1, energy industries (renewable sources). The category is correctly identified and indicated in A.4.2 of the PDD.	☒	☒
A.4.3. Technology to be employed by the project activity				
A.4.3.1. Does the technical design of the project activity reflect current good practices?	1, 2, 3, 16	Yes. The technical design of the project activity reflects current good practices. The proposed project involves the installation of two water turbine-generators each of which with a rated capacity of 0.4MW and a 0.8MW respectively, providing a total capacity of 1.2MW.	☒	☒
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, 3, 16	<u>Corrective Action Request No.2</u> 1. The key parameters of the applied equipment should be presented in this section of the PDD, in accordance with the technical specifications provided by PP on-site. 2. The PP is requested to indicate sufficient and transparent information of its technology may impact on the greenhouse gas balance. 3. The PP is requested to include the statement whether there is technology transfer taken place in the project activity. 4. According to the PDD guidelines, this section should include the statement of how environmentally safe the project is, and the relevant training.	CAR	☒
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, 3, 16	The proposed project adopts domestic technologies and equipment. There is no technology transfer required. Please refer to CAR2	CAR	☒

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A.4.3.4. Is the technology implemented by the project activity environmentally safe?	1, 2, 3, 10, 11	The technology, which has been used worldwide, implemented by the project activity is safe on the environment. According to the EIA approval, it mentioned that there is no significant negative influence on environment and ecosystem in the project area. Please refer to CAR2	CAR	☒
A.4.3.5. Is the information provided in compliance with actual situation or planning?	1, 2, 3	During on-site visiting, the actual situation of the proposed project is in compliance with the information provided.	☒	☒
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, 3	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. However, please refer to CR1 below	CR	☒
A.4.3.7. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1, 2, 3	<u>Clarification Request No. 2.</u> The PP is requested to clarify whether it is possible to be substituted by other technology within the project period.	CR	☒
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, 3, 24, 25	Yes, the training program has been designed for the power plant staff regarding operational knowledge and maintenance regulation. The related documents have been reviewed by the auditor on-site.	☒	☒
A.4.3.9. Is information available on the demand and requirements for training and maintenance?	1, 2, 3, 24	Yes. Please refer to CAR2	CAR	☒
A.4.3.10. Is a schedule available for the implementation of the project and are there any risks for delays?	1, 2, 3, 46	The proposed project has been put into operation since November, 2009.	☒	☒
A.4.4. Estimated amount of emission reductions over the chosen crediting period				

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
A.4.4.1. Is the form required for the indication of projected emission reductions correctly applied?	1, 2, 3	Yes. The form is correctly applied according to the table in section A.4.4.	☒	☒
A.4.4.2. Are the figures provided consistent with other data presented in the PDD?	1, 2, 3	Yes, the figures provided are consistent with other data in the PDD.	☒	☒
A.4.5. Public funding of the project activity				
A.4.5.1. Is the information provided on public funding provided in compliance with the actual situation or planning as available by the project participants?	1, 2, 3, 34, 35	Yes. There is no public funding from Annex I parties for this project.	☒	☒
A.4.5.2. Is all information provided consistent with the details given in remaining chapters of the PDD (in particular annex 2)?	Ditto	The statements are consistent within the PDD.	☒	☒
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, 4	<u>Corrective Action Request No.3</u> According to the GS Office confirmation, ACM0002 v12.3 should be applied with the proposed project, as well as the PDD should also be applied to the latest version. The PP is requested to update with it throughout of the PDD and relevant documents.	CAR	☒
B.1.2.Is the applied version the most recent one and / or is this version still applicable?	1, 2, 3, 4	Yes, ACM0002 version 12.3 should be applied in the revised PDD, which is the most recent one, and still applicable. Please refer to CAR3	CAR	☒
B.1.3.Does the methodology refer to the following tools with its latest approved versions: - Tool to calculate the emission factor for	1, 2, 3, 4, 5, 6	The proposed project refers to the following tools: 1) Tool to calculate the emission factor for an electricity system Version 02.2.1;	☒	☒

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD										
an electricity system - Tool for the demonstration and assessment of additionality - Tool to calculate project or leakage CO ₂ emissions from fossil fuel combustion		2) Tool for the demonstration and assessment of additionality Version 05.2												
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, 3, 4	Please refer to CAR3	CAR	☑										
Fill in the required amount of sub checklists for applicability criteria as given by the methodology applied and comment at least every line answered with “No”														
B.2.2.Criterion 1: the project is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit.	1, 2, 3, 4	<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>No</td></tr><tr><td>Compliance provable?</td><td>No</td></tr><tr><td>Evidences provided in the PDD?</td><td>No</td></tr><tr><td>Compliance verified?</td><td>No</td></tr></table> <u>Corrective Action Request No.4</u> The PP is requested to state whether the proposed project is a newly-built run-of-river hydropower plant with/without a single or multiple reservoirs.	Applicability checklist	Yes / No	Criterion discussed in the PDD?	No	Compliance provable?	No	Evidences provided in the PDD?	No	Compliance verified?	No	CAR	☑
Applicability checklist	Yes / No													
Criterion discussed in the PDD?	No													
Compliance provable?	No													
Evidences provided in the PDD?	No													
Compliance verified?	No													
B.2.3. Criterion 2 (in the case of capacity additions, retrofits or replacements (except for wind, solar, wave or tidal power capacity addition projects which use Option 2: on page10 to calculate the parameter $EG_{PJ,y})$):	1, 2, 3, 4	Not applicable	☑	☑										

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The existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.				
B.2.4.Criterion 3 (in the case of hydro plants): -The project activity is implemented in an existing single or multiple reservoirs, with no change in the volume of any of reservoirs or -The project activity is implemented in an existing single or multiple reservoirs, where the volume of any of reservoirs is increased and the power density of each reservoir, as per the definitions given in the Project Emissions section, is greater than 4 W/m² or -The project activity results in new single or multiple reservoirs and the power density of each reservoir, as per the definitions given in the Project Emissions section, is greater than 4 W/m².	1, 2, 3, 4	Please refer to CAR4	CAR	☒
B.2.5.Criterion 4 In case of hydro power plants using multiple reservoirs where the power density of any of the reservoirs is lower	1, 2, 3, 4	Not applicable	☒	☒

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
than 4 W/m² all the following conditions must apply: -The power density calculated for the entire project activity using equation 5 is greater than 4W/m²; -Multiple reservoirs and hydro power plants located at the same river and where are designed together to function as an integrated project that collectively constitute the generation capacity of the combined power plant; -Water flow between multiple reservoirs is not used by any other hydropower unit which is not a part of the project activity; -Total installed capacity of the power units, which are driven using water from the reservoirs with power density lower than 4 W/m², is lower than 15MW; -Total installed capacity of the power units, which are driven using water from reservoirs with power density lower than 4 W/m², is less than 10% of the total installed capacity of the project activity from multiple reservoirs.				
B.2.6.Criterion 5 (in the case of retrofit, replacement or capacity addition): The most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, i.e. to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance"	1, 2, 3, 4	Not applicable	☒	☒
B.2.7.Criterion 6:	1, 2,		CAR	☒

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS		PDD in GSP	Final PDD										
Defined electricity grid boundaries	3, 4, 18, 22	<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Evidences provided in the PDD?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> The project is connected to Northwest China Power Grid, which has been demonstrated by the Approval of Grid Connection. However, please refer to CAR5 <u>Corrective Action Request No.5</u> According to the PDD guideline, a flow diagram of the project boundary should be included into the PDD to clearly indicate the component with the project boundary.	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Evidences provided in the PDD?	Yes	Compliance verified?	Yes			
Applicability checklist	Yes / No														
Criterion discussed in the PDD?	Yes														
Compliance provable?	Yes														
Evidences provided in the PDD?	Yes														
Compliance verified?	Yes														
B.2.8.Criterion 7: Approved inclusion in other methodologies (if applied only)	1, 2, 3, 4	Not applicable		☒	☒										
B.2.9.Criterion 8: Exclusion of fuel switching activities	1, 2, 3, 4	<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Evidences provided in the PDD?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> The proposed project doesn't involve switching from fossil fuels to renewable energy sources.	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Evidences provided in the PDD?	Yes	Compliance verified?	Yes		☒	☒
Applicability checklist	Yes / No														
Criterion discussed in the PDD?	Yes														
Compliance provable?	Yes														
Evidences provided in the PDD?	Yes														
Compliance verified?	Yes														
B.2.10. Criterion 9: Exclusion of biomass fired power plants	1, 2, 3, 4	<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr></table>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes		☒	☒				
Applicability checklist	Yes / No														
Criterion discussed in the PDD?	Yes														
Compliance provable?	Yes														

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		Evidences provided in the PDD?	Yes		
		Compliance verified?	Yes		
		The proposed project is not biomass fired power plants.			
B.2.11. Criterion 10: Exclusion of hydro power plants that result in new reservoirs or in the increase in existing reservoirs where the power density of the power plant is less than 4 W/m ² .	1, 2, 3, 4	Not applicable		☑	☑
B.3. Description of the sources and gases included in the project boundary					
B.3.1.Source: Fugitive Emissions from non-condensable gases contained in geothermal steam (geothermal power plants only) Gas(es): CO ₂ , CH ₄ Type: Project Emissions	1, 2, 3, 4	<u>Corrective Action Request No.6</u> According to the methodology, the PP is requested to clearly define the sources and gases included in the project boundary in the PDD.		CAR	☑
B.3.2.Source: Emissions from the reservoir (hydro power plants only) Gas(es): CH ₄ Type: Project Emissions	1, 2, 3, 4	Please refer to CAR6		CAR	☑
B.3.3. Source: Emission from combustion of fossil fuels for electricity generation in solar thermal power plants and geothermal power plants (solar thermal power plants only) Gas(es): CO ₂ Type: Project Emissions	1, 2, 3, 4	Please refer to CAR6		CAR	☑

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B.3.4.Source: Emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity Gas(es): CO ₂ Type: Baseline Emissions	1, 2, 3, 4	Please refer to CAR6	CAR	☒
B.3.5.Source: Emissions from electricity generation in fossil fuel fired power plants of imported electricity (project electricity consumption) Gas(es): CO ₂	1, 2, 3, 4	Please refer to CAR6	CAR	☒
B.3.6.Do the spatial and technological boundaries as verified on-site comply with the discussion provided by the PDD?	1, 2, 3, 4, 18	Please refer to CAR5	CAR	☒
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, 3, 4, 39, 40, 69	Yes, it is clearly described in chapter B.6.1 that the baseline emission factor is calculated reflected in the combined margin (CM) calculations: described in the "Tool to calculate the emission factor for an electricity system". (version 02.2.1) <u>Clarification Request No. 3.</u> The PP is requested to clarify why the latest Emission Factors issued on December 25, 2010 is not adopted in the GS PDD.	CR	☒
B.4.2.In case of any modification or retrofit of existing facilities: Is data available to determine the historic production level?	1, 2, 3, 4	Not applicable.	☒	☒
B.4.3.In case of any modification or retrofit of exist-	1, 2,	Not applicable.	☒	☒

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
ing facilities: Have conservative assumptions been applied in order to estimate the point in time when the existing equipment needs to be replaced?	3, 4			
Changes required for methodology implementation in 2 nd and 3 rd crediting periods				
B.4.4.Has the continued validity of the baseline been correctly assessed?	1, 2, 3, 4	Not applicable.	☒	☒
B.4.5.Has the baseline been updated with new data?	1, 2, 3, 4	Not applicable.	☒	☒
B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity (assessment and demonstration of additionality):				
B.5.1.Is evidence provided, that Carbon Fund has been considered seriously in the decision to proceed with the project activity (Previous Announcement Check)?	1, 2, 3, 4, 17, 21, 27, 28	<u>Clarification Request No. 4.</u> The PP is requested to provide credible evidences on the previous announcement check, according to the requirements of GS VVM. > ERPA > Memorandum of Understanding (MoU) between the Gold Standard Foundation & Climate Bridge for Qielong 1.2MW Hydro Power Project China According to the GS VVM 1.0, > A written statement (e.g. in the PDD) against debundling of the project. > For micro-scale projects, an owner declaration is required that guarantees that the project complies with local environmental regulations.	CR	☒
B.5.2.Have realistic and credible alternatives been identified providing comparable outputs or	1, 2, 3, 4	The following four scenarios alternatives were discussed in chapter B.5	☒	☒

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
services? (step 1a)		1) The Project activity, but not undertaken as CDM project activity; 2) Construction of a fossil coal-fired power plant with an equivalent amount of installed capacity or annual electricity output; 3) Construction of a power plant using other sources of renewable energy with equivalent amount of annual electricity generation; 4) Provision of an equivalent amount of annual electricity output by the grid (Northwest China Power Grid) where the Project is connected into.		
B.5.3.Is the project activity without CDM included in these alternatives? (step 1a)	1, 2, 3, 4	Yes, see alternative 1 above in the B.5.2.	☒	☒
B.5.4.Is a discussion provided for all identified alternatives concerning the compliance with applicable laws and regulations? (step 1b)	1, 2, 3, 4, 44, 45	The alternative 2) above, the construction of a coal-fired power project with 1.2MW unit capacity is not in compliance with the state's laws and regulations. Alternative 1), alternative 3) and alternative 4) meet national 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, 3, 4	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, 4, 5	Yes, the analysis method is appropriate, benchmark analysis is applied.	☒	☒
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, 3, 4, 5	Not applicable. The simple cost analysis does not apply as the proposed project not only obtains carbon fund revenue but also revenue through electricity sales.	☒	☒
B.5.8.In case of Option II (investment comparison analysis): Is the most suitable financial in-	1, 2, 3, 4,	Investment comparison analysis method is only applicable to projects whose alternatives are similar investment projects. The al-	☒	☒

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indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?	5	ternative baseline scenario of the proposed project is Northwest China Power Grid rather than new investment projects. Therefore option II is not an appropriate method too.		
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, 3, 4, 5, 36, 38	With reference to Economic Evaluation Code for Small Hydro-power Projects (SL16-95), the financial benchmark rate of project IRR after tax is 10%. This benchmark has been widely used for power project investments in P. R. China and serves as the sectoral benchmark rate on total investment for hydropower projects.	☒	☒
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, 3, 4, 41, 66	The calculation of financial figures for IRR is done for the project activity with and without the revenues from the sale of CERs.	☒	☒
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, 3, 4, 5, 36, 37, 38, 46~59	<u>Corrective Action Request No.7</u> The PP is requested to transparently break down the operating cost of the proposed project and provide sufficient explanation on how the sub-items were considered. <u>Clarification Request No. 5.</u> 1, The PP is requested to present the IRR calculation in a transparent manner, and clarify the inconsistency of the IRR indicator between the submitted FSR and PDD applied. 2, The PP is requested to clarify the inconsistency of applied VAT rate between the project activity and the official regulations. 3, The PP is requested to present relevant explanation how to consider the internal electricity consumption and line loss to the local grid.	CAR CR	☒
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	1, 2, 3, 4, 5	Not applicable	☒	☒

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different alternatives to occur?				
B.5.13. In case of applying step 3 (barrier analysis): Is transparent and documented evidence provided on the existence and significance of these barriers?	1, 2, 3, 4, 5	Not applicable	☒	☒
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, 3, 4, 5	Not applicable	☒	☒
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)?	1,2,4, 61, 62, 63, 65	<u>Corrective Action Request No.8</u> The PP is requested to justify the appropriateness of the criteria selection in the common practice, identify the similar projects based on the common practice analysis, and make sure the completeness of the analysis.	CAR	☒
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)?	1,2,4, 61, 62, 63, 65	Please refer to CAR8	CAR	☒
B.5.17. Is it appropriately explained how the approval of the project activity will help to overcome the economic and financial hurdles or other identified barriers?	1, 2, 3, 19, 20, 21	<u>Clarification Request No. 6.</u> The PP is requested to clarify that the PP claimed that with the carbon funds, it will help to make the project financially attractive. However, the proposed project has been put into operation in 2009 before involvement of carbon funds.	CR	☒
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	1, 2, 3, 4,	The calculation of the emission reduction is applied according to "Tool to calculate the emission factor for an electricity system	☒	☒

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the proposed project activity?	6	(version 02.2.1)". STEP 1: Identify the relevant electric power systems. STEP2: Choose whether to include off-grid power plants in the project electricity system (optional) STEP 3: Select a method to determine the operating margin (OM). STEP 4: Calculate the operating margin emission factor according to the selected method. STEP 5: Calculate the build margin emission factor (BM). STEP 6: Calculate the combined margin (CM) emissions factor. These steps are described in a transparent manner within the PDD.		
B.6.1.2. Is every selection of options offered by the methodology correctly justified and is this justification in line with the situation verified on-site?	1, 2, 3, 4, 6	Yes, the every selection of options has been justified correctly and verified during desk-review. They are in line with the actual situation on site.	☒	☒
B.6.1.3. Are the formulae required for the determination of project emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1, 2, 3, 4, 6	There is no project emission considered since the proposed project is run-of-river without reservoir.	☒	☒
B.6.1.4. Are the formulae required for the determination of baseline emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1, 2, 3, 4, 6	Yes, formulae required for the determination of emission reductions are correctly presented in B.6.3 of the PDD.	☒	☒
B.6.1.5. Is the choice of options to determine the emissions factor (OM, BM) justified in a suitable and transparent manner?	1, 2, 3, 4, 6	Yes. The choice of options to determine the emission factor is justified.	☒	☒
B.6.1.6. Are the six steps as defined as per the "Tool for calculation of emission factor for	1, 2, 3, 4,	Yes. These six steps as defined as per the Tool version 02 are correctly applied.	☒	☒

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electrical systems" correctly applied by the project participants?	6			
B.6.1.7. In case of alternative weighing factors for the Combined Margin: Is the quantification of the alternative weighing factor justified in a suitable and transparent manner?	1, 2, 3, 4, 6	The default weights (OM 0.5 and BM 0.5) for hydropower projects are used.	☒	☒
B.6.1.8. In case of alternative weighing factors for the Combined Margin: Is the guidance for the PDD concerning the acceptability of alternative weights considered in the discussion?	1, 2, 3, 4, 6	Not applicable.	☒	☒
B.6.1.9. Are the formulae required for the determination of leakage emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1, 2, 3, 4, 6	No leakage is considered according to the methodology ACM0002 version 12.3.	☒	☒
Tool to calculate project or leakage CO2 emissions from fossil fuel combustion				
B.6.1.10. Is the formula required for the determination of CO2 project emissions from fossil fuel combustion correctly presented, enabling a complete identification of parameter to be used and / or monitored	1, 2, 3, 4	Not applicable.	☒	☒
B.6.1.11. Is option A (preferred approach) or option B chosen for the determination of the CO2 emission coefficient COEF _{i,y} and is COEF _{i,y} correctly determined?	1, 2, 3, 4	Not applicable.	☒	☒
B.6.1.12. Are formulae required for the determination of emission reductions correctly presented?	1, 2, 3, 4	Not applicable.	☒	☒

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B.6.2. Data and parameters that are available at validation				
B.6.2.1. Is the list of parameters presented in chapter B.6.2 considered to be complete with regard to the requirements of the applied methodology?	1, 2, 3, 4, 6	<u>Corrective Action Request No.9</u> With regard to the requirements of the applied methodology ACM0002 version 12 and "Tool for calculation of emission factor for electrical systems", the PP is requested to add the relevant parameters at validation in the section 6.2.	CAR	☒
B.6.2.2. Is the choice of ex-ante or ex-post vintage of OM and BM factors clearly specified in the PDD?	1, 2, 3, 4	The ex-ante calculation of emission factors is chosen.	☒	☒
B.6.2.3. Parameter Title: GWP_{CH_4} Global warming potential of methane valid for the relevant commitment period (tCO ₂ /tCH ₄)	1, 2, 3, 4	Not applicable	☒	☒
B.6.2.4. Parameter Title: $EG_{historical}$ (only applicable to modification/retrofit of an existing grid-connected renewable power plant/unit) Average of historical electricity delivered by the existing facility to the grid (MWh)	1, 2, 3, 4	Not applicable	☒	☒
B.6.2.5. Parameter Title: $DATE_{BaselineRetrofit}$ (only applicable to modification/retrofit of an existing grid-connected renewable power plant/unit) Point in time when the existing equipment would need to be replaced in the absence of the project activity	1, 2, 3, 4	Not applicable	☒	☒
B.6.2.6. Parameter Title: EF_{Res} (only applicable to hydro-power plants with reservoir) Default emission factor for emissions from reservoirs (kgCO ₂ e/MWh)	1, 2, 3, 4	Not applicable	☒	☒

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B.6.2.7. Parameter Title: CAP _{BL} (W) (only applicable to modification/retrofit of an existing grid-connected renewable power plant/unit) Installed capacity of the hydro power plant before the implementation of the project activity. For new hydro power plants, this value is zero.	1, 2, 3, 4	Not applicable		☒	☒
B.6.2.8. Parameter Title: A _{BL} (only applicable to hydropower plant projects with reservoir) Area of the reservoir measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m2). For new reservoirs, this value is zero (m ²).	1, 2, 3, 4	Not applicable		☒	☒
B.6.2.9. Parameter Title: Emission factor of the grid (EF _{CM} in tCO ₂ /MWh)	1, 2, 3, 4, 6	Data Checklist	Yes / No	CAR	☒
		Title in line with methodology?	No		
		Data unit correctly expressed?	No		
		Appropriate description of parameter?	No		
		Source clearly referenced?	No		
		Correct value provided?	No		
		Has this value been verified?	No		
		Choice of data correctly justified?	No		
		Measurement method correctly described?	No		
Please refer to CAR9					
B.6.2.10. Parameter Title: Operating margin (EF _{OM} in tCO ₂ /MWh) emission factor of the grid	1, 2, 3, 4, 6	Data Checklist	Yes / No	CAR	☒
		Title in line with methodology?	No		
		Data unit correctly expressed?	No		

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		Appropriate description of parameter?	No		
		Source clearly referenced?	No		
		Correct value provided?	No		
		Has this value been verified?	No		
		Choice of data correctly justified?	No		
		Measurement method correctly described?	No		
		Please refer to CAR9			
B.6.2.11. Parameter Title: Build margin (EF_{BM} in tCO_2/MWh) emission factor of the grid	1, 2, 3, 4, 6	Data Checklist	Yes / No	CAR	☒
		Title in line with methodology?	No		
		Data unit correctly expressed?	No		
		Appropriate description of parameter?	No		
		Source clearly referenced?	No		
		Correct value provided?	No		
		Has this value been verified?	No		
		Choice of data correctly justified?	No		
		Measurement method correctly described?	No		
		Please refer to CAR9			
B.6.2.12. Parameter Title: $FC_{i,m,y}$, $FC_{i,y}$, $FC_{i,j,y}$, $FC_{i,k,y}$, $FC_{i,n,y}$ and $FC_{i,n,h}$ Amount of fossil fuel type i consumed by power plant / unit m,j,k or n (or in the project electricity system in case of $FC_{i,y}$) in year y or hour h (mass or volume unit)	1, 2, 3, 4, 40	Data Checklist	Yes / No	CAR	☒
		Title in line with methodology?	No		
		Data unit correctly expressed?	No		
		Appropriate description of parameter?	No		
		Source clearly referenced?	No		
		Correct value provided?	No		
		Has this value been verified?	No		
		Choice of data correctly justified?	No		
		Measurement method correctly described?	No		
		Please refer to CAR9			

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B.6.2.13. Parameter Title: $NCV_{i,y}$ Net calorific value (energy content) of fossil fuel type i in year y (GJ / mass or volume unit)	1, 2, 3, 4, 40	<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> Please refer to CAR9	Data Checklist	Yes / No	Title in line with methodology?	No	Data unit correctly expressed?	No	Appropriate description of parameter?	No	Source clearly referenced?	No	Correct value provided?	No	Has this value been verified?	No	Choice of data correctly justified?	No	Measurement method correctly described?	No	CAR	☒
Data Checklist	Yes / No																					
Title in line with methodology?	No																					
Data unit correctly expressed?	No																					
Appropriate description of parameter?	No																					
Source clearly referenced?	No																					
Correct value provided?	No																					
Has this value been verified?	No																					
Choice of data correctly justified?	No																					
Measurement method correctly described?	No																					
B.6.2.14. Parameter Title: $EF_{CO2,i,y}$ and $EF_{CO2,m,i,y}$ CO2 emission factor of fossil fuel type i in year y (tCO2/GJ)	1, 2, 3, 4, 40	<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> Please refer to CAR9	Data Checklist	Yes / No	Title in line with methodology?	No	Data unit correctly expressed?	No	Appropriate description of parameter?	No	Source clearly referenced?	No	Correct value provided?	No	Has this value been verified?	No	Choice of data correctly justified?	No	Measurement method correctly described?	No	CAR	☒
Data Checklist	Yes / No																					
Title in line with methodology?	No																					
Data unit correctly expressed?	No																					
Appropriate description of parameter?	No																					
Source clearly referenced?	No																					
Correct value provided?	No																					
Has this value been verified?	No																					
Choice of data correctly justified?	No																					
Measurement method correctly described?	No																					
B.6.2.15. Parameter Title: $EG_{m,y}$, EG_y , $EG_{j,y}$, $EG_{k,y}$ and $EG_{n,h}$ Net electricity generated and delivered to the grid by power plant / unit m,j,k or n (or in the project electricity system in case of EG_y) in year y or hour h (MWh)	1, 2, 3, 4, 40	<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></table>	Data Checklist	Yes / No	Title in line with methodology?	No	Data unit correctly expressed?	No	Appropriate description of parameter?	No	Source clearly referenced?	No	CAR	☒								
Data Checklist	Yes / No																					
Title in line with methodology?	No																					
Data unit correctly expressed?	No																					
Appropriate description of parameter?	No																					
Source clearly referenced?	No																					

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		Correct value provided?	No		
		Has this value been verified?	No		
		Choice of data correctly justified?	No		
		Measurement method correctly described?	No		
		Please refer to CAR9			
B.6.2.16. Parameter Title: $EG_{PJ,h}$ Electricity displaced by the project activity in hour h of year y (in MWh) (only applicabe for the dispatch data OM)	1, 2, 3, 4	Not applicable		☒	☒
B.6.2.17. Parameter Title: $\eta_{m,y}$ Average net energy conversion efficiency of power unit m in year y	1, 2, 3, 4	Not applicable		☒	☒
B.6.2.18. Parameter Title: APJ (only applicable to hydropower plant projects with reservoir) Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full.	1, 2, 3, 4	Not applicable since the proposed project is run-of-river without reservoir.		☒	☒
B.6.2.19. Parameter Title: fraction of time with low costs /must run plant at the margin (for simple adjusted OM only)	1, 2, 3, 4	Not applicable		☒	☒
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, 3, 4	Yes, the procedures are the same as used for future monitoring.		☒	☒
B.6.3.2. Are the GHG calculations documented in a complete and transparent manner?	1, 2, 3, 4,	Yes, the GHG calculations are documented in a complete and transparent manner. The latest issued emission factors by NDRC		CR	☒

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	40, 41	in July 02, 2009 are used, however, please refer to CR3		
B.6.3.3. Is the calculation of the operating margin and build margin emission factors documented electronically in a spreadsheet with the relevant information as defined per the "Tool for calculation of emission factor for electrical systems"? Has this spreadsheet been submitted to the validation team?	1, 2, 3, 4, 40, 41	The calculation of the operating margin and build margin emission factors is documented electronically in a spreadsheet, based on the "Tool for calculation of emission factor for electrical systems" version 02.2.1 And emission factor calculation spreadsheet has been submitted to the validation team.	☒	☒
B.6.3.4. Is the data provided in this section consistent with data as presented in other chapters of the PDD?	1, 2, 3, 4	Yes, there is no inconsistency of data within the PDD.	☒	☒
B.6.4. Summary of the ex-ante estimation of emission reductions				
B.6.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	1, 41	Yes, the project definitely will result in fewer GHG emissions than the baseline scenario.	☒	☒
B.6.4.2. Is the form/table required for the indication of projected emission reductions correctly applied?	1, 41	Yes, the form is correctly applied according to the PDD template.	☒	☒
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, 3, 4, 46	The proposed project has been put into operation since 2009, and will be implemented as retrospective GS project.	☒	☒
B.6.4.4. Is the data provided in this section in consistency with data as presented in other chapters of the PDD?	1, 41	Yes, no inconsistency has been found in the other chapters of the PDD.	☒	☒
B.7. Application of the monitoring methodology and description of the monitoring plan				
B.7.1. Data and parameters monitored				

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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, 3, 4	<u>Corrective Action Request No.10</u> 1, The PP is requested to correct the measurable parameter e.g. E _{Gin} and E _{Gout} and calculated parameter, e.g. net electricity. 2, Cap _{PJ} should be considered as monitored parameter with the requirement of the ACM0002 v12.3. 3, As for those sustainable indicators identified with the asterisk in GS PDD, the PP is requested to consider to be monitored and be added into the monitoring plan, according to the GS v1.0 guideline.	CAR	☒																								
Integrate the required amount of sub-checklists for monitoring parameter and comment on any line answered with “No”																												
B.7.1.2. Parameter Title: E _{Gy} Electricity supplied by the project activity to the grid (in MWh)	1, 2, 3, 4	<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>No</td></tr><tr><td>Appropriate description of parameter?</td><td>No</td></tr><tr><td>Source clearly referenced?</td><td>No</td></tr><tr><td>Correct value provided for estimation?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>No</td></tr><tr><td>Correct reference to standards?</td><td>No</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>No</td></tr><tr><td>QA/QC procedures appropriate?</td><td>No</td></tr></table> Please refer to CAR10	Monitoring Checklist	Yes / No	Title in line with methodology?	No	Data unit correctly expressed?	No	Appropriate description of parameter?	No	Source clearly referenced?	No	Correct value provided for estimation?	No	Has this value been verified?	No	Measurement method correctly described?	No	Correct reference to standards?	No	Indication of accuracy provided?	No	QA/QC procedures described?	No	QA/QC procedures appropriate?	No	CAR	☒
Monitoring Checklist	Yes / No																											
Title in line with methodology?	No																											
Data unit correctly expressed?	No																											
Appropriate description of parameter?	No																											
Source clearly referenced?	No																											
Correct value provided for estimation?	No																											
Has this value been verified?	No																											
Measurement method correctly described?	No																											
Correct reference to standards?	No																											
Indication of accuracy provided?	No																											
QA/QC procedures described?	No																											
QA/QC procedures appropriate?	No																											
B.7.1.3. Parameter Title: TEG _y Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y (in MWh).	1, 2, 3, 4	Not applicable, as the project emission needs not to be considered.	☒	☒																								

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B.7.1.4. Parameter Title: $EF_{grid,CM,y}$ Combined margin CO2 emission factor for grid connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system” (tCO2/MWh)	1, 2, 3, 4	Not applicable, as this protocol refers to the ex-ante determination of CM.	☒	☒																								
B.7.1.5. Parameter Title: $PEFC_{j,y}$ CO2 emissions from fossil fuel combustion in process j during the year y (tCO2/yr). Calculated as per the latest version of the “Tool to calculate project or leakage CO2 emissions from fossil fuel combustion”	1, 2, 3, 4	Not applicable	☒	☒																								
B.7.1.6. Parameter Title: Cap_{PJ} (only applicable to hydropower plant projects) Installed capacity of the hydro power plant after the implementation of the project activity (W).	1, 2, 3, 4	<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>No</td></tr><tr><td>Appropriate description of parameter?</td><td>No</td></tr><tr><td>Source clearly referenced?</td><td>No</td></tr><tr><td>Correct value provided for estimation?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>No</td></tr><tr><td>Correct reference to standards?</td><td>No</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>No</td></tr><tr><td>QA/QC procedures appropriate?</td><td>No</td></tr></table> Please refer to CAR10.	Monitoring Checklist	Yes / No	Title in line with methodology?	No	Data unit correctly expressed?	No	Appropriate description of parameter?	No	Source clearly referenced?	No	Correct value provided for estimation?	No	Has this value been verified?	No	Measurement method correctly described?	No	Correct reference to standards?	No	Indication of accuracy provided?	No	QA/QC procedures described?	No	QA/QC procedures appropriate?	No	CAR	☒
Monitoring Checklist	Yes / No																											
Title in line with methodology?	No																											
Data unit correctly expressed?	No																											
Appropriate description of parameter?	No																											
Source clearly referenced?	No																											
Correct value provided for estimation?	No																											
Has this value been verified?	No																											
Measurement method correctly described?	No																											
Correct reference to standards?	No																											
Indication of accuracy provided?	No																											
QA/QC procedures described?	No																											
QA/QC procedures appropriate?	No																											

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B.7.1.7. Parameter Title: A_{PJ} (only applicable to hydropower plant projects with reservoir) Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m^2).	1, 2, 3, 4	Not applicable	☒	☒
B.7.1.8. Parameter Title: w_{Main,CO_2} Average mass fraction of CO_2 in the produced steam t CO_2 /t steam (for geothermal projects only)	1, 2, 3, 4	Not applicable	☒	☒
B.7.1.9. Parameter Title: w_{Main,CH_4} Average mass fraction of CH_4 in the produced steam (t CH_4 /t steam). for geothermal projects only)	1, 2, 3, 4	Not applicable	☒	☒
B.7.1.10. Parameter Title: $M_{S,y}$ Quantity of steam produced during the year y. (for geothermal projects only)	1, 2, 3, 4	Not applicable	☒	☒
B.7.2. Description of the monitoring plan				
B.7.2.1. Is the operational and management structure clearly described and in compliance with the envisioned situation?	1, 2, 3, 4, 26	The management structure diagram of the monitoring has been included in Chapter 7. 2 of PDD document.	☒	☒
B.7.2.2. Are responsibilities and institutional arrangements for data collection and archiving clearly provided?	1, 2, 3, 4, 26	Yes. The overall responsibility will be taken by the project owner. A CDM group will be established to carry out the monitoring, according to the PDD.	☒	☒
B.7.2.3. Does the monitoring plan provide current good monitoring practice?	1, 2, 3, 4, 26, 60	The monitoring plan presented within the PDD seems practicable. Internal audits will be implemented to ensure the monitoring quality. According to the PDD, all data including calibration records will be kept until 2 years after the end of the total credit time of the	CAR	☒

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		CDM project. However, please refer to <u>Corrective Action Request No.11</u> 1, The PP is requested to illustrate the fundamental principles of the monitoring plan in a diagram, which comply with the ACM0002. 2, The PP is requested to present the relevant information on the national standard, the electricity meter should follow and comply with for QA/QC.		
B.7.2.4. If applicable: Does annex 4 provide useful information enabling a better understanding of the envisioned monitoring provisions?	1, 2, 3, 4	Not applicable.	☒	☒
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, 3, 4	The indicating date for finishing baseline is on 07/12/2011	☒	☒
B.8.2.Is this consistent with the time line of the PDD history?	1, 2, 3, 4	Yes, it is consistent with the time line of the PDD history.	☒	☒
B.8.3.Is the information on the person(s) / entity(ies) responsible for the application of the baseline and monitoring methodology provided consistent with the actual situation?	1, 2, 3, 4	Yes, the information of responsible entity involved is Climate Bridge Ltd., which is consistent with the actual situation.	☒	☒
B.8.4.Is information provided whether this person / entity is also considered a project participant?	1, 2, 3, 4	The mentioned entity is not project participants. Please refer to CR1	CR	☒

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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, 3, 4, 36	The expected operational lifetime is 20 years, which has been clearly defined in the FSR and the PDD and cross-checked by the equipment purchase contracts.	☒	☒
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, 3, 4	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, 10	Yes. The analysis of the environmental impacts of the project activity has been sufficiently described in the EIA report. It has been approved by Gannan Tibetan Autonomous Prefecture EPA on 10/09/2007	☒	☒
D.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been approved?	1, 2, 11	Yes, EIA is a must in P. R. China for new hydro power projects.	☒	☒
D.1.3. Will the project create any adverse environmental effects?	1, 2, 10, 11	Referred to EIA and EIA approval, the project will not create significant negative environmental impacts.	☒	☒

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
D.1.4. Were trans boundary environmental impacts identified in the analysis?	1, 2, 10	There were not transboundary environmental impacts for the proposed project.	☒	☒
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, 10, 11	Referring to the EIA and the approval of EIA, there is no adverse environmental impact from the project activity. It was confirmed during the on-site visiting.	☒	☒
D.2.2. Does the project comply with environmental legislation in the host country?	1, 2, 10, 11	Yes, the project is in conformity with the environmental legislation of P. R. China and the EIA has been approved by authorized organization.	☒	☒
E. Stakeholders' comments				
E.1. Brief description how comments by local stakeholders have been invited and compiled				
E.1.1. Have relevant stakeholders been consulted?	1, 2, 30, 31, 32	Yes, a total of 21 Stakeholders attended the Qielong Stakeholder Consultation Meeting held on 24 June, 2010, from 2:30 pm – 04:30 pm at Meeting Room of Qielong Power Plant, Xiahe County, Gansu, China As for the validation guidance of GS VVM, it mentioned that for micro-scale projects: At least one consultation is to be held and it has to meet the requirements of an Initial Stakeholder Consultation. During on-site audit and interview with a few participants, the audit team confirms that the stakeholder meeting is valid and representative.	☒	☒
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	1, 2, 29, 30	The participants and stakeholders were invited, via email and through the phone calls.	☒	☒

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E.1.3.If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	1, 2, 10, 11, 30	There are no regulations/laws in China for carrying out the stakeholder consultation process for this project activity.	☒	☒
E.1.4.Is the undertaken stakeholder process that was carried out described in a complete and transparent manner?	1, 2, 30	Yes. Confirmed with the detailed documents, 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, 2, 30, 32	Yes, E.2. of the PDD provides a summary of stakeholder comments received.	☒	☒
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, 30, 31	The overall comments with regards to the project were positive and no need to modify the proposed project.	☒	☒
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, 3, 4	Yes, the information provided is consistent with section A.3	☒	☒
F.1.2.Is the information on all private participants and directly involved Parties presented?	1, 2, 3, 4	As the project activity is a VER project, no parties or host country approvals are necessary. The project participants are Xiahe Xingxin Hydropower Development Co., Ltd. (owner) and Climate Bridge Ltd. (Buyer).	☒	☒

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Annex 2: Information regarding public funding				
F.1.3. Is the information provided on the inclusion of public funding (if any) in consistency with the actual situation presented by the project participants?	1, 2, 34, 35	Yes. There is no public funding necessary; all costs are covered by the private equity.	☒	☒
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, 34, 35	See F.1.3	☒	☒
Annex 3: Baseline information				
F.1.5. If additional background information on baseline data is provided: Is this information consistent with data presented by other sections of the PDD?	1, 2, 39, 40	Yes, the provided information on baseline data is the same as data presented by other sections of the PDD.	☒	☒
F.1.6. Is the data provided verifiable? Has sufficient evidence been provided to the validation team?	1, 2, 39, 40	Yes, the evidencing data provided is verifiable and sufficient.	☒	☒
F.1.7. Does the additional information substantiate / support statements given in other sections of the PDD?	1, 2, 39, 40	Yes, the additional information supports statements in other sections of the PDD.	☒	☒
Annex 5: Monitoring information				
F.1.8. If additional background information on monitoring is provided: Is this information consistent with data presented in other sections of the PDD?	1, 2, 26	Not applicable.	☒	☒
F.1.9. Is the information provided verifiable? Has sufficient evidence been provided to the vali-	1, 2, 26	Not applicable.	☒	☒

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ation team?				
F.1.10. Do the additional information and / or documented procedures substantiate / support statements given in other sections of the PDD?	1, 2, 26	Not applicable.	☒	☒

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Table 2 Resolution of Corrective Action and Clarification Requests

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
CAR			
<u>Corrective Action Request No. 1</u> The PP is requested to indicate the location and GPS coordinates of the project in SI system.	A.4.1.1	The GPS coordinates were revised in the PDD A.4.1.4 part with SI system	☒ GPS coordinates of the proposed project have been revised in the PDD and verified on-site.
<u>Corrective Action Request No. 2</u> 5. The key parameters of the applied equipment should be presented in this section of the PDD, in accordance with the technical specifications provided by PP on-site. 6. The PP is requested to indicate sufficient and transparent information of its technology may impact on the greenhouse gas balance. 7. The PP is requested to include the statement whether there is technology transfer taken place in the project activity. 8. According to the PDD guidelines, this section should include the statement of how environmentally safe the project is, and the relevant training.	A.4.3.2	1. The key parameters of turbines and generators are added in the PDD as table A-2. 2. Information of the technology of this project is updated in the PDD, A 4.2. 3. The statement of no technology transfer is included in the PDD, A 4.2. 4. Environmental safe statement is also included in the PDD, A 4.2.	☒ 1, The key parameters have been revised in the PDD, which is consistent with the technical specifications the PP provided. (IRL 16) 2, The relevant information on the hydropower, which may impact on the green house gas balance have been discussed in the revised PDD. 3, The audit team confirmed that there is no technology transfer in the project activity after on-site visiting. (IRL 16) 4, Training, as well as environmentally safe concerns has been well addressed in the revised PDD. (IRL 24, 25)

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<u>Corrective Action Request No. 3</u> According to the GS Office confirmation, ACM0002 v12.3 should be applied with the proposed project, as well as the PDD should also be applied to the latest version. The PP is requested to update with it throughout of the PDD and relevant documents.	B.1.1	PDD is updated with ACM0002 v12.3 methodology and applied to the latest version. Please refer to new version of PDD and its annexes.	☒ The PP has confirmed with the GS Office, e.g. email confirmation (IRL 68), that latest ACM0002 was applied with the proposed project. Compliance with each applicability conditions as listed in the chosen baseline and monitoring methodology ACM0002 Version 12.3 has been well demonstrated.
<u>Corrective Action Request No. 4</u> The PP is requested to state whether the proposed project is a newly-built run-of-river hydropower plant with/without a single or multiple reservoirs.	B.2.2	The project is a newly-built run-of-river hydropower plant without a reservoir, against approved FSR, approved EIA.	☒ During on-site visiting, the audit team confirms that the project is a newly-built run-of-river hydro-power plant without any reservoir. (IRL 08)
<u>Corrective Action Request No. 5</u> According to the PDD guideline, a flow diagram of the project boundary should be included into the PDD to clearly indicate the component with the project boundary.	B.2.6	The flow diagram is included into the PDD, B.3. <u>Response from DOE on 08102011:</u> The defined boundary was not clear indicated, e.g. two separate boundaries performed in the diagram? <u>Response from the PP on 25112011:</u> The defined boundary has been revised in the PDD,B.3	☒ The flow diagram in B.3 and the meter location in B.7.2 have been revised, respectively. The project boundary has been clearly defined in the PDD. (IRL 22, 26)
<u>Corrective Action Request No. 6</u> According to the methodology, the PP is requested to clearly define the sources and gases included in the project boundary in the PDD.	B.3.1	The defined source and gases are included in the PDD, B.3.	☒ The main emission sources and gases have been discussed per ACM0002 in the revised PDD.

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<u>Corrective Action Request No. 7</u> The PP is requested to transparently break down the operating cost of the proposed project and provide sufficient explanation on how the sub-items were considered.	B.5.11	The breakdown of operating cost for 2010 year: <table><tr><th>No.</th><th>Items</th><th>Cost (RMB)</th></tr><tr><td>1</td><td>staff payments</td><td>168,600</td></tr><tr><td>2</td><td>office expense</td><td>1,078.5</td></tr><tr><td>3</td><td>material cost and rent</td><td>14,825.5</td></tr><tr><td>4</td><td>Employee labor union funds and education expenses</td><td>7,654.5</td></tr><tr><td>5</td><td>other expense</td><td>8,567</td></tr><tr><td></td><td>Total</td><td>200,725.5</td></tr></table> Please refer to the Annex 1 for the details. <u>Response from DOE on 08102011:</u> Please add the sub-items of annual operation costs into the Table B-3 based on the original FSR. In addition, grid emission factor, internal consumption and line loss were not taken as key financial parameters. Meanwhile, the net electricity generation should be mentioned. <u>Response from the PP on 25112011:</u> Relevant modification has been made in the Table B-3 in the PDD.	No.	Items	Cost (RMB)	1	staff payments	168,600	2	office expense	1,078.5	3	material cost and rent	14,825.5	4	Employee labor union funds and education expenses	7,654.5	5	other expense	8,567		Total	200,725.5	☒ The break down of annual operating costs has been clearly inserted into the Table 3 of the revised PDD. And the relevant parameters have been crosschecked by the public available sources (IRL 36-38, 46-53), which have been validated by the audit team. The audit team confirms that the estimations of sub-items and the annual O&M costs are appropriate and reasonable.
No.	Items	Cost (RMB)																						
1	staff payments	168,600																						
2	office expense	1,078.5																						
3	material cost and rent	14,825.5																						
4	Employee labor union funds and education expenses	7,654.5																						
5	other expense	8,567																						
	Total	200,725.5																						

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<u>Corrective Action Request No. 8</u> The PP is requested to justify the appropriateness of the criteria selection in the common practice, identify the similar projects based on the common practice analysis, and make sure the completeness of the analysis.	B.5.15	The common practice analysis has been performed in the PDD, B.5 in the following three categories, 1, In Gansu Province, within the same region; 2, Below 10MW of the installed capacity, broadly similar technology; 3, Since 2002, the reform was taken place within the power industry in China; (a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing)	☑ The audit team has surveyed the public available data source, e.g. NDRC, UNFCCC and China Water Resources Yearbook 2007-2009, and confirmed that the predefined criteria is appropriate, and the listed projects are complete for the common practice analysis. (IRL 61, 62, 63, 65)
<u>Corrective Action Request No. 9</u> With regard to the requirements of the applied methodology ACM0002 version 12 and "Tool for calculation of emission factor for electrical systems", the PP is requested to add the relevant parameters at validation in the section 6.2.	B.6.2.1	The relevant parameters are included in the PDD, B. 6.2.	☑ The audit team confirmed that the parameters available at validation have been well addressed, in accordance with the relevant methodology and tools, and they are deemed complete.

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<u>Corrective Action Request No. 10</u> 1, The PP is requested to correct the measurable parameter e.g. E_{gin} and E_{Gout} and calculated parameter, e.g. net electricity. 2, Cap_{PJ} should be considered as monitored parameter with the requirement of the ACM0002 v12.3. 3, As for those sustainable indicators identified with the asterisk in GS PDD, the PP is requested to consider to be monitored and be added into the monitoring plan, according to the GS v1.0 guideline.	B.7.1.1	1. The measurable parameter $EG_{facility, y}$ has been added in the PDD B.7.1. 2. The measurable parameter Cap_{PJ} has been added in the PDD B.7.1. 3. For the sustainable indicators, please refer to the PDD B.7.1 part after the baseline monitoring parameters. <u>Response from DOE on 22122011:</u> 1, The list of MP was not complete according to meth requirements, e.g. EF_{grid}, TEG are missing. The PP is requested to further revise it. 2, Since there was a negative stakeholder comment as of para 6.1 of stakeholder consultation report that the machinery noise may affect the health of the worker on-site. The PP is requested to consider the noise monitoring in the monitoring plan, to be in accordance with the VVM GSv1.0. <u>Response from the PP on 27122011:</u> 1. The parameter EF_{grid} has been calculated ex ante during the validation (refer to the PDD B.6). As for the parameter TEG is for the project with the power density greater than 4 W/m² and less than or equal to 10 W/m². However, there is no reservoir in this project. Thus, both of the parameters are not included in the monitoring plan. 2. The noise indicator has been included in the monitoring plan, but only in construction period. Please refer to the PDD B.7.1.	☑ 1, $EG_{facility, y}$ as net grid-in electricity, has been added in the monitoring plan in the revised PDD; 2, Cap_{PJ} has also been added in the monitoring plan, and the nameplate of turbine-generator units (0.4MW+0.8MW) has been validated on-site. 3, Totally, 9 sustainable indicators are considered to be monitored as followed, a, Water Quality and Quantity/Air Quality/Other pollutants/Soil condition b, Employment (including job quality, fulfilment of labor standards); c, Livelihood of the poor (including poverty alleviation); d, Access to energy services; e, Employment (number). They are in accordance with GS v1.0 guideline.
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<u>Corrective Action Request No. 11</u> 1, The PP is requested to illustrate the fundamental principles of the monitoring plan in a diagram, which comply with the ACM0002. 2, The PP is requested to present the relevant information on the national standard, the electricity meter should follow and comply with for QA/QC.	B.7.2.3	All the updates have been included in the PDD, B7.2 part.	☒ The relevant national standard (DL/T448-2000) has been provided to DOE for validation. (IRL 26, 60)
CR			
<u>Clarification Request No. 1</u> The PP is requested to clarify whether Climate Bridge Ltd. as project participant involved in the proposed project, since there is inconsistency in the GS PDD. e.g. A.3 and B.5.	A.3.3	Climate Bridge Ltd. is one of the project participants (the buyer) for this project.	☒ Information on the project participants has been corrected and found consistent in the following chapters in the revised GS PDD. (IRL 17)
<u>Clarification Request No. 2</u> The PP is requested to clarify whether it is possible to be substituted by other technology within the project period.	A.4.3.7	This is impossible to be substituted by other technology within the project period as no more resource can be applied and no technology transfer from other countries. <u>Response from DOE on 08102011:</u> Please provide the supporting evidences, e.g. energy book, expertise opinion, etc. <u>Response from the PP on 25112011:</u> According to the publication from Gannan Gansu Government website, http://www.gn.gansu.gov.cn/html/2008-11/3131.html Gannan is mainly rich in water resource. Thus, no other resource is available to be developed and no technology is possible to substitute this project by electricity generating.	☒ The relevant descriptions and evidences have sufficiently clarified that it is not possible to substitute by other technology within the project periods. The audit team has accepted the PP's explanations. (IRL 43)

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Clarification Request No. 3 The PP is requested to clarify why the latest Emission Factors issued on December 25, 2010 is not adopted in the GS PDD.	B.4.1	As confirmed with GS representative, the emission factor used in the PDD is more conservative than the latest one, so we remain the published one in 2009 in the PDD.	☑ Considering the emission factors in 2009 are lower than the one issued officially in 2010, the audit team accepted that the emission reductions was determined in a more conservative manner. (IRL 39, 69)
Clarification Request No. 4 The PP is requested to provide credible evidences on the previous announcement check, according to the requirements of GS VVM. > ERPA > Memorandum of Understanding (MoU) between the Gold Standard Foundation & Climate Bridge for Qielong 1.2MW Hydro Power Project China According to the GS VVM 1.0, > A written statement (e.g. in the PDD) against debundling of the project. > For micro-scale projects, an owner declaration is required that guarantees that the project complies with local environmental regulations.	B.5.1	All the evidences are attached as annexes 2 to 5. 1. Please refer to Annex 2 for ERPA 2. Please refer to Annex 3 for MOU 3. Please refer to Annex 4 for Non-debundled claim 4. Please refer to Annex 5 for environmental claim	☑ Based on the public information, GS has performed a pre-feasibility assessment of the project in order to determine its eligibility. The MOU signed stated that GS has approved the proposed project to undergo GS fast track, for retroactive registration. (IRL 21) The discussions and negotiations between the carbon credit buyer Climate Bridge Ltd. and project owner Xiahe Xingxin Hydropower Development Co., Ltd. intensified and concluded with the signing an ERPA (IRL 17) The debundling claim and self-declaration on environment commitment as required by GS have also been provided. (IRL 27, 28)

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Clarification Request No. 5 1, The PP is requested to present the IRR calculation in a transparent manner, and clarify the inconsistency of the IRR indicator between the submitted FSR and PDD applied. 2, The PP is requested to clarify the inconsistency of applied VAT rate between the project activity and the official regulations. 3, The PP is requested to present relevant explanation how to consider the internal electricity consumption and line loss to the local grid.	B.5.11	1. The inconsistency is mainly caused by several slight differences between the indicators. In the FSR, the unit used is ten thousand RMB and the VAT-Based Construction and Education Tax is not included in the cash flow calculation. While in the financial model of PDD, the unit is RMB and the VAT-Based Construction and Education Tax is included. Please refer to the calculation tables in the FSR and financial model in Annex 16 of the PDD. 2. The explanation is attached as annex 7. 3. The lines loss is calculated by the grid company and the electricity balance sheets are issued by the grid company with stamps. Please refer to annex 8. The internal electricity consumption is calculated as 1.0% based on the on-site check. <u>Response from DOE on 08102011:</u> The audit team could not accept Annex-6 and 7 as the PP's self explanation without the third party signature and statement. <u>Response from the PP on 25112011:</u> An explanation with stamp about the indicator chosen in the FSR is provided by the design institute.	☑ 1, The corrected excel spreadsheets (IRL 66) have the readable formulae and unprotected cells, which allow the audit team to reproduce the analysis and obtain the same results with the PP's assumption and explanation. It was also evidenced by the errors corrections from FSR complier. (IRL 64) 2, Inconsistent VAT rate has been corrected as 25% in stead of 33%, to be in accordance with the updated national tax law (IRL 55). Though the project IRR increased (8.46%) in the view of conservative, it is still less than the benchmark of 10%. 3, The audit team confirms that the estimations of the key parameters mentioned are appropriate and reasonable in the investment analysis, e.g. internal electricity consumption (0.5%) and line loss (3%) against the evidences. (IRL 37, 42)
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Validation Protocol

Project Title: Qielong 1.2MW Hydro Power Project

Date of Completion: 21/06/2012

Number of Pages: 41



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Clarification Request No. 6 The PP is requested to clarify that the PP claimed that with the carbon funds, it will help to make the project financially attractive. However, the proposed project has been put into operation in 2009 before involvement of carbon funds.	B.5.17	This is a retroactive project. According to the gold standard voluntary emission reductions (VERs) manual for project developers, part 1.5, this project is comply with the conditions listed and confirmed by the GS with the MOU as a retroactive project.	☒ The MOU and Pre feasibility assessment summary have been reviewed by the audit team, which stated that GS has approved the proposed project to undergo GS fast track, for retroactive registration. (IRL 20, 21)
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Table 3 Unresolved Corrective Action and Clarification Requests (in case of denials)

Clarifications and / or corrective action requests by validation team	Id. of CAR/CR	Explanation of Conclusion for Denial
-	-	-



Annex 2: Information Reference List

Annex-2	2012-06-21	Validation of the “Qielong 1.2MW Hydro Power Project” Information Reference List	Page 1 of 8	 Industrie Service
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Ref No.	Author/Editor/ Issuer	Title/Type of Document	Issuance and/or submission date(dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
1.	Climate Bridge Ltd.	GS PDD “Qielong 1.2MW Hydro Power Project”, Version 01	28/09/2010	PDD for GSP
2.	The Gold Standard	The Gold Standard Validation & Verification Manual for Voluntary Offset Projects	06/2007	Version 1
3.	The Gold Standard	Project Design Document for Gold Standard Voluntary Offset projects (GS-VER-PDD)	04/2006	
4.	UNFCCC	Approved consolidated baseline and monitoring methodology ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, ACM0002 – Version 12.3	17/09/2010	
5.	UNFCCC	Tool for the demonstration and assessment of additionality, Version 05.2	26/08/2008	
6.	UNFCCC	Tool to Calculate the Emission Factor for an Electricity System, Version 02.2	16/10/2009	
7.	TÜV SÜD	Participant list of on-site interviews	27/10/2010- 28/10/2010	
8.	TÜV SÜD	On-site interviews conducted by TÜV SÜD. Validation Team: Maharjan Bhai Raja TÜV SÜD Munich Jiang Zhe Jiangsu TÜV Product Service, Beijing Branch Interviewed Persons: Zhang Lei (Mr.) Officer, Environment Protection Bureau of Xiahe County Wu Jian (Mr.) Resident, Dazhuang Village Tang Xuewu (Mr.) Staff, Qielong Hydropower Station Wang Chaoming (Mr.) Head, Qielong Hydropower Station Chen Rui (Mr.) Project Manager, Xiahe Xingxin Hydropower Development Co., Ltd. Yu Liang (Mrs.) Project Manager, Climate Bridge Ltd. Xu Chen (Mrs.) Project Manager, Climate Bridge Ltd.	09/07/2011- 10/07/2011	

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Ref No.	Author/Editor/ Issuer	Title/Type of Document	Issuance and/or submission date(dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
9.	Lanzhou Xinrong Hydro & Power Technology Consulting Co., Ltd.	Feasibility Study Report	08/2007	IRR input data source
10.	Lanzhou Coal Mining Design and Research Academy, Environmental Engineering Institute	Environment Impact Assessment Report	24/08/2007	
11.	Environmental Protection Bureau of Gannan Tibetan Prefecture	Approval of EIA no.: 142 (2007)	10/09/2007	
12.	Water Resources Bureau of Ganan Tibetan Autonomous Prefecture	FSR Approval with S/N. 145 (2007)	15/09/2007	
13.	Xiahe Xingxin Hydropower Development Co., Ltd. (XXHD)	Board Meeting Resolution	15/08/2007	Investment decision made
14.	Xiahe County Industrial & Commercial Administration	Business License with registration no: 623027200000058(1-1)	17/01/2008	Renewed on 13/05/2011
15.	XXHD & Linxia Prefecture No.2	General Construction Contract	12/09/2007	Cross-check evidence of project

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Ref No.	Author/Editor/ Issuer	Title/Type of Document	Issuance and/or submission date(dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
	Construction Engineering Co., Ltd			start date
16.	XXHD & Lanzhou Landian Hydro Power Co., Ltd	Water Turbine-Generator Units Purchase Contract and Technical Agreement.	20/03/2008	Cross-check evidence of project start date
17.	XXHD & Climate Bridge Ltd.	Emission Reduction Purchase Agreement (ERPA)	08/05/2008	Carbon fund revenue considerations
18.	Xiahe Power Company	Approval of Grid Connection	12/11/2009	
19.	The Gold Standard	Pre-feasibility assessment report on Nanyangshan 1.26MW Hydropower Project (GS547)	19/11/2008	Reference project
20.	Climate Bridge Ltd.	Fast-track Revisions for Qielong Micro-scale Hydropower Project (GS 481)	24/12/2010	
21.	Gold Standard Foundation & Climate Bridge	Memorandum of Understanding (MoU) for Qielong 1.2MW Hydro Power Project China	04/03/2009	
22.	China NDRC	Definition of local grid	11/04/2002	
23.	XXHD	Project plant layout	10/07/2011 (submission)	
24.	XXHD	Staff training records and arrangement	09/2009	
25.	XXHD	Staff Qualifications	10/07/2011 (submission)	
26.	XXHD	Monitoring and Quality Control Manual	06/2009	
27.	XXHD	Written statement against debundling of the project	14/07/2011	

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Ref No.	Author/Editor/ Issuer	Title/Type of Document	Issuance and/or submission date(dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
28.	XXHD	PP declaration on the commitment to the local environmental regulations	14/07/2011	
29.	XXHD	Stakeholders invitation published by Gannan Daily, poster, invitation email	08/06/2010	
30.	XXHD	Stakeholder Consultation Report	24/06/2009	
31.	Local stakeholders	Returned stakeholders questionnaires	24/06/2009	
32.	Local residents	Confirmation letter for community contributions	10/05/2010	Evidence for local sustainable development
33.	TÜV SÜD	http://www.netinform.net/KE/Wegweiser/Guide2.aspx?ID=7257&Ebene1_ID=49&Ebene2_ID=2424&mode=4	04/07/2011	GSP
34.	XXHD	Project Financial Plan	10/07/2011 (submission)	Evidence for non-ODA involvement
35.	XXHD	Declaration of Financier of Non-Use of Official Development Assistance	15/12/2011	Evidence for non-ODA involvement
36.	Ministry of Water Resources of P.R. China	Economic Evaluation Code for Small Hydropower Projects, SL16-95	1995	Benchmark evidence
37.	Ministry of Water Resources of P.R. China	Hydroenergy Design Code for Small Hydro Power Project SL76-94	28/03/1994	Cross-check evidence of auxiliary power consumption rate
38.	Ministry of Water Resources, P.R. China	Updated Bulletin of Valid Hydropower Technical Standards	2008	Confirming the validity of SL16-95 and SL76-94
39.	NDRC	2009 Baseline Emission Factors for Regional Power Grids in China	02/07/2009	Data source of baseline emission

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Ref No.	Author/Editor/ Issuer	Title/Type of Document	Issuance and/or submission date(dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
				factor
40.	Climate Bridge Ltd.	Emission factors calculation spreadsheet	10/07/2011	
41.	Climate Bridge Ltd.	IRR calculation spreadsheets and ER calculation spreadsheets	10/07/2011	
42.	China Electricity Press	China Electric Industry Yearbooks (2003-2007, 2008, 2009)	2004~2010	Cross-check evidence to exclude alternative 3 Input data resource of ER calculation
43.	China Statistics Press	China Energy Statistical Yearbooks (2006-2008)	2007~2009	Input data resource of ER calculation
44.	State Council	Notice on Strictly Forbidding Construction of Fossil Fuel Fired Power Plants of or under 135 MW with decree no.: 2002-6	15/04/2002	Cross-check evidence to exclude alternative 2
45.	National Power Industry Administration	Provisional Regulations on Controlling the Construction of the Small Scale Thermal Power Generation Units	07/08/1997	Cross-check evidence to exclude alternative 2
46.	Gansu Xianda Accounting Firm Co., Ltd.	Final Account Audit Report for Construction Completion	03/12/2010	Cross-check evidence of total investment

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Ref No.	Author/Editor/ Issuer	Title/Type of Document	Issuance and/or submission date(dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
47.	NDRC	Notice on the Feed-in-Tariff of Northwest China Power Grid	18/06/2004	
48.	Gansu Price Bureau	Notification of Electricity Tariff for new-built hydropower project	11/07/2006	
49.	UNFCCC	Information Note on the Highest Tariffs Applied by the Executive Board in Its Decisions on Registration of Projects in the People's Republic of China	EB61	Paragraph 78
50.	XXHD	Monthly payroll for the Staff and Workers in the hydropower station	01/2010-12/2010	Cross-check evidence of staff number and salary
51.	XXHD	Statistics of O&M costs and invoices in 2010	01/2010-12/2010	Cross-check evidence of O&M costs
52.	Programming and Design Institute of Water Resources and Hydropower of Water Resources Ministry and Power Ministry	Interim Regulations of Hydropower Construction Project Financial Evaluation	14/06/1994	Cross-check evidence of O&M costs
53.	Ministry of Labor and Social Security, P.R.China	Decision of State Council on Establishing the Uniform Pension Insurance System	16/07/1997	Cross-check evidence of O&M costs
54.	Xiahe Power Company	Monthly electricity transaction notes	11/2009-11/2010	Cross-check evidence of operation hours and electricity generation
55.	State Council,	Provisional Regulations of the People's Republic of China on Income Tax	13/12/1993	Cross-check

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Ref No.	Author/Editor/ Issuer	Title/Type of Document	Issuance and/or submission date(dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
	P.R.China			evidence of income tax rate
56.	State Council, P.R.China	Provisional Regulations of the People's Republic of China on VAT Tax	10/11/2008	Cross-check evidence of VAT rate
57.	Ministry of Finance People's Republic of China	Implementation Details of Provisional Regulations of the People's Republic of China on Enterprise Income Tax	04/02/1994	Cross-check evidence of salvage value rate
58.	State Council, P.R. China	Code for education tax rate and city maintenance and construction tax rate	09/04/2003	Cross-check evidence of tax rates
59.	the People's Bank of China	Statistics of Loan Interest Rate http://www.pbc.gov.cn/publish/zhengcehuobisi/631/2011/20110406165308868396674/20110406165308868396674_.html	n.a	Cross-check evidence of the loan interest rate
60.	Chinese Electric Industry Regulation	DL/T448-2000 Technical Administrative Code of Electric Energy Metering	27/10/2010 (submission)	Cross-check evidence of the calibration frequency of the meter
61.	Commerce and Trade Commission of P.R. China	Classification and design safety standard of hydropower projects (DL5810-2003)	09/01/2003	Evidence for Common practice analysis
62.	State Council of China	Notice on Issuing Electric Power Sector Reform Programme	10/02/2002	
63.	CDM Pipeline	List of Hydropower projects (small scale) in Gansu Province	10/2011	Evidence for Common practice

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Ref No.	Author/Editor/ Issuer	Title/Type of Document	Issuance and/or submission date(dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
				analysis
64.	Lanzhou Xinrong Hydro & Power Technology Consulting Co., Ltd.	Error corrections in published FSR	03/11/2011	Regarding accounting principle and parameters applied
65.	China Water & Power Press	China Water Resources Yearbooks (2006-2010)	2007~2011	Evidence for Common practice analysis
66.	Climate Bridge Ltd.	IRR calculation spreadsheets, version 3	07/12/2011	Final version
67.	GS Beijing Office	Written clarifications on ODA validation	07/12/2011	Clarification on ODA validation
68.	GS Beijing Office	Written clarifications on selection of large/small scale of applicable methodology	15/12/2011	
69.	NDRC	2010 Baseline Emission Factors for Regional Power Grids in China	25/12/2010	Latest emission factor
70.	Local residents	Statement from local residents concerning social contribution	10/05/2010	Mr. Cai Rangjia, etc.
71.	Climate Bridge Ltd.	Sustainable Development Assessment Matrix	19/06/2012	
72.	Climate Bridge Ltd.	GS PDD “Qielong 1.2MW Hydro Power Project”, Version 05	19/06/2012	Final GS PDD



Annex 3: Appointment Certificates



Industrie Service

CERTIFICATE OF APPOINTMENT

Mr Maharjan, Bhai Raja, fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

Qualification applicable to						
Standard	CDM	JI	GS	VCS	VER	Other
Date	23.03.11					

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		23.03.11	23.03.11	23.03.11		

Other qualification					
Country Expertise					
Region	1	2	3	4	5
Date	23.03.11				
Financial Expertise					
Date	10.06.11				

Qualification in technical areas	
Technical Area	Date
1.2_Energy generation from renewable energy source	23.03.11
2.1_Electricity distribution	23.03.11
3.1_Energy demand	10.06.11

This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.

In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference No. CMS-Z-0008/03.

Date	Signature
23.03.12 Extension of Validity	



Industrie Service

CERTIFICATE OF APPOINTMENT

Mr Zhe, Jiang (Eric), fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

Qualification applicable to						
Standard	CDM	JI	GS	VCS	VER	Other
Date	31.03.11					

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		31.03.11	31.03.11			

Other qualification					
Country Expertise					
Region	1	2	3	4	5
Date	31.03.11				31.03.11
Financial Expertise					
Date	31.03.11				

Qualification in technical areas	
Technical Area	Date
13.1_Waste handling and disposal	31.03.11
1.2_Energy generation from renewable energy source	07.04.11

This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.

In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference No. CMS-Z-0037/05.

Date	Signature
31.03.12 Extension of Validity	<i>Thomas Klein</i>



Industrie Service

CERTIFICATE OF APPOINTMENT

Mr Mitterwallner, Robert, fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

Qualification applicable to						
Standard	CDM	JI	GS	VCS	VER	Other
Date	23.03.11					

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		23.03.11	23.03.1	23.03.11	23.03.11	

Other qualification					
Country Expertise					
Region	1	2	3	4	5
Date	23.03.11		23.03.11		
Financial Expertise					
Date					

Qualification in technical areas	
Technical Area	Date
1.2_Energy generation from renewable energy source	23.03.11
4.1_Cement sector	23.03.11
4.3_Iron and steel sector	23.03.11
13.1_Waste handling and disposal	23.03.11

This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.

In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference No. CMS-Z-0011/02.

Date	Signature
23.03.12 Extension of Validity	