



中国质量认证中心
CHINA QUALITY CERTIFICATION CENTRE

VALIDATION REPORT

(Final)

China Quality Certification Centre
(CQC)

“Gansu Ganzhou District Nantan Phase I 50MWp Solar Photovoltaic
Power Project”

Report No: Val-2013-0002

Date: 17/06/2013



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Subject: Validation of a CDM project

China Quality Certification Center (CQC)

Client: Gansu Heihe Hydropower New Energy Development Co., Ltd.

Project site(s):

The Project is located in the southern area of Ganzhou District Zhangye city, Gansu province, P.R.China. The geographical coordinate range of the Project are 100°11'42.58"~100°13'48.48" east longitude and 38°50'11"~38°51'00" north latitude.

Project Title: Gansu Ganzhou District Nantan Phase I 50MWp Solar Photovoltaic Power Project

Applied Methodology/version: ACM0002 (Version 13.0.0) *Consolidated baseline methodology for grid-connected electricity generation from renewable sources*

First PDD version: Version 01

Final PDD version: Version 02

Date of issuance: 16/04/2013

Date of issuance: 21/05/2013

Estimated annual Emission Reductions: 67,177 tCO₂e

Work carried by:

Ms. WANG Keli
Ms. NIE Xi

Work reviewed by:

Mr. HONG Dajian
Mr. CHEN Yixing

Summary of the validation opinion:

The review of the project design documentation and the subsequent follow-up interviews, information cross check and on-site visit have provided CQC with sufficient evidence to determine the fulfillment of all stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM.

Hence, CQC will recommend the project for registration by the CDM Executive Board.

Approved by:

Mr. Li Guozhen (Vice-president of CQC)



Abbreviations

BoD	Board of Directors
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
CO₂	Carbon dioxide
CO₂e	Carbon dioxide equivalent
CQC	China Quality Certification Centre
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EB	Executive Board
EIA	Environmental Impact Assessment
FSR	Feasibility Study Report
GHG	Greenhouse Gas
I	Interview
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
LoA	Letter of Approval
MoV	Means of Validation
NDRC	National Development and Reform Commission
NGO	Non Government Organization
OM	Operating Margin
PCP	CDM Project Cycle Procedure
PDD	Project Design Document
PLF	Plant Load factor
PP	Project Participant
PS	CDM Project Standard
NWCPG	Northwest China Power Grid
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Clean Development Mechanism Validation and Verification Standard



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Executive Summary – Validation Opinion

Gansu Heihe Hydropower New Energy Development Co., Ltd. has commissioned China Quality Certification Centre (CQC) to validate the project “Gansu Ganzhou District Nantan Phase I 50MWp Solar Photovoltaic Power Project” in China according to CDM modalities and procedures, subsequent decisions by the CMP, documents released by CDM Executive Board and available on the UNFCCC CDM website, requirements of host party (China) for CDM, as well as criteria for consistent project operations, monitoring and reporting (together referred to as CDM requirements).

CQC has applied the principles of consistency, transparency, impartiality, independence and safeguarding against conflicts of interest, confidentiality to perform this validation. CQC has reviewed the completeness, accuracy, conservativeness, relevance, credibility, reliability of the information and evidence provided by PP to assess whether the proposed project meets the CDM requirements. Based on VVS, CQC validation team applied the means of document review, follow-up interview, on-site visit, information cross-check to perform the validation. The review of PDD and supporting documents related to baseline and monitoring methodology, the subsequent background investigation, follow-up interviews and review of comments by parties, stakeholders and NGOs have provided CQC with sufficient evidence to determine the fulfillment of CDM requirements. The criteria of validation include VVS, CDM requirements, as well as CQC’s validation procedures.

The purpose of the project activity is to generate electricity using solar sources and export it to the connected grid, thereby displacing the electricity from grid. The project is unilateral, it has obtained the LoA from China’s DNA which confirms that the project is achieving sustainable development and the participation of the involved party is voluntary. The validation did not reveal any information that indicates that the project can be seen as a diversion of ODA funding towards China.

During validation, 2 Corrective Action Requests (CARs) and 1 Clarification Request (CL) were raised by CQC validation team and successfully closed.

In detail the conclusions can be summarized as follows:

- The project is in line with all related and applied CDM requirements;
- The project correctly applies the methodology ACM0002 (Version 13.0.0) “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, “Tool to Calculate the Emission Factor for an Electricity System” (Version 03.0.0), Tool for the demonstration and assessment of additionality (Version 07.0.0), Validation and Verification Standard (Version 03.0).
- The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated annual emission



reduction of 67,177 tCO₂e is most likely to be achieved within the first crediting period.

The conclusions of this report show, that the project, as it was described in the PDD, is in line with all criteria applicable for the validation. CQC thus requests for registration of the project as a CDM project activity.



1 INTRODUCTION

CQC has performed a validation for the “Gansu Ganzhou District Nantan Phase I 50MWp Solar Photovoltaic Power Project” in China (hereinafter referred to as “the project”). This report summarizes validation objective, scope, methodology and validation findings for the project, with regard to the applicable CDM requirements and VVS^{/23/}.

1.1 Validation Objective

The purpose of this validation is to have an independent third party assessment on the project design. In particular the project’s baseline, additionality, monitoring plan are validated in order to confirm whether the project design as documented is sound and reasonable and meets the applicable CDM requirements which include:

- the requirements of Article 12 of the Kyoto Protocol^{/21/};
- the CDM modalities and procedures as agreed in the Marrakech Accords^{/22/} under decision 17/CP.7; the annex to the decision;
- subsequent decisions made by COP/MOP & CDM Executive Board,
- requirements of host party (China) for CDM;
- related criteria for consistent project operations, monitoring and reporting.

This validation is seen as necessary to provide assurance to stakeholders on the quality of the project and its intended generation of certified emission reductions (CERs).

1.2 Validation Scope

The validation scope is given as an independent and objective review of the project’s design, baseline identification, additionality demonstration and monitoring plan which are included in the PDD and other relevant supporting documents.

This validation is not intended to provide any consulting services to the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design.

1.3 Validation Criteria

CQC has performed this validation according to ACM0002 (Version 13.0.0): Consolidated baseline methodology for grid-connected electricity generation from renewable sources^{/16/}, Tool to Calculate the Emission Factor for an

Electricity System^{/18/} (Version 03.0.0), Tool for the demonstration and assessment of additionality (Version 07.0.0)^{/17/}, PS^{/24/}, PCP^{/25/} and VVS^{/23/}. In addition, CQC validation team conducted this validation based on CQC's CDM quality manual and procedures.

1.4 History of the validation process

PDD (Version 01)^{/1/} was submitted to CQC on 18/04/2013. Based on this documentation, a document review and a fact finding mission in form of an on-site visit was performed on 26/04/2013. PDD (Version 01) was made publicly available through UNFCCC web site from 20/04/2013 to 19/05/2013 for public comments.

Afterwards, CQC developed the draft validation report and issues it to PP for confirmation and taking corrective actions.

PDD (Version 02)^{/2/} submitted on 21/05/2013 served as the basis for the final assessment presented herewith. The main changes between the PDD (Version 01) and the PDD (Version 02) submitted for registration are:

- PDD was revised according to the resolutions of CARs and CL raised during validation;
- Typing errors and grammar mistakes were corrected.

2 VALIDATION METHODOLOGY

CQC has, based on VVS, applied a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs. The validation consists of the following phases:

- a desk review of PDD and related documents;
- follow-up interviews with project stakeholders;
- raising CARs and CLs and issuing draft validation report.
- Resolution of CARs and CLs and the issuance of the final validation report and opinion.

The following sections outline each step in detail.

2.1 Validation Team Appointment

Based on the requirements of competency, experience and qualified sectoral scopes, CQC has composed a validation team in accordance with CQC's internal procedures.

Table 1 Validation Team

Qualification	Last name	First name	Country
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Validation team leader	WANG	Keli	China
Validation team member	NIE	Xi	China
Technical reviewer	HONG	Dajian	China
Technical reviewer	CHEN	Yixing	China

2.2 Desk Review of the Project Design Documentation

PP submitted the PDD (Version 01) and supporting background documents related to the project design to CQC on 18/04/2013.

PP submitted the PDD (Version 02) and supplementary evidence for closing the CARs and CL to CQC on 21/05/2013.

The validation team has used technical information from sources other than PDD, such as FSR, EIA, host party legislations, technical reports and statistical yearbooks related to the project design.

All documents and information quoted during the validation are listed in Appendix C of this report.

2.3 Follow-up Interviews

On 26/04/2013, CQC validation team (Ms. WANG Keli, Ms. NIE Xi) conducted an on-site visit for the project and follow-up interview with the project stakeholders.

During the visit, interviews with the project participant (PP), the consultant, project stakeholders, local authorities and local residents were carried out to confirm selected information and to resolve issues identified in the document review.

The key interviewee and main topics of the interviews are summarized in Table 3.

Table 3: Interview and Interview Topics

Date	Interviewee	Organization	Interview Topics
26/04/2013	Mr. LIU Mengde Ms. ZHOU Xuan	Gansu Heihe Hydropower New Energy Development Co., Ltd.	Project background information; Project approval status (incl. FSR, EIA, CDM project approval); Applicability of selected methodology; Baseline determination; Additionality; Project monitoring and management plan; Details of emissions reduction calculation; Stakeholder consultation process. Modalities of Communications The timeline of the project activity; Project related legal issues; CER allocation /ownership;



			Technical details of the project realization including technical specification, capacity, estimated life time of the project plant units etc.; Power Purchase Agreement; Installation, test, check, calibration verification of the Metering system; Monitoring plan; Management system; Environmental impact and responses for environmental issues; Public consultation; Modalities of Communications.
26/04/2013	Mr. LI Xiaoping Mr. HE Yan Officer	Development and Reform committee of Zhangye	Approval by the local governments; Project development status; Sustainable development issues; Local electricity power resource; Other Issues affecting the local community.
26/04/2013	Mr. ZHANG Yanping Officer	Environment Protection Bureau of Zhangye	Approval by the local governments; Analysis of Environmental Impact of the project; Analysis of local stake holder consultation.
26/04/2013	Mr. DING Jinjin	Grid company of Zhangye	Power Purchase Agreement; Power connection with the grid; Tariff
26/04/2013	Ms. YANG Yang Mr. ZHANG Qingfeng	Local residents	Public consultation process; Impacts on daily life caused by the project.

2.4 Use of the Validation Protocol

In order to ensure transparency a validation protocol was customized for the project based on VVS. The protocol shows in transparent manner criteria (requirements), means of verification and validating findings. The validation protocol serves the following purposes:

- It organizes, details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.



The validation protocol consists of two tables. The different columns in these tables are described in the figure below. The validation protocol to be completed by PP for the Project is enclosed in Appendix A to this report.

Corrective action requests (CARs) are issued, where:

- PP have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
- The CDM requirements have not been met; or
- There is a risk that emission reductions cannot be monitored and calculated.

Requests for clarification (CLs) are issued if the information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

Validation Protocol Table 1: validation checklist for Clean Development Mechanism (CDM) Project Activities				
Checklist Question	Reference	Means of verification (MoV)	Validation findings	Draft and/or Final Conclusion
The various requirements in Table 2 are linked to checklist questions the project should meet. The checklist is organised in different sections, following the VVS (Version 03.0)	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	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.	This is either acceptable based on evidence provided (OK), or a corrective action request (CAR) due to non-compliance with the checklist question (See below). A request for clarification (CL) is used when the validation team has identified a need for further clarification.
Validation Protocol Table 2: Resolution of Corrective Action and Clarification Requests				
Draft report clarifications and corrective action requests	Ref. to checklist question in table 1	Summary of PP's response	Validation conclusion	
If the conclusions from the draft Validation are either a CAR or a CL, these should be listed in this section.	Reference to the checklist question number in Table 1 where the CAR or CL is explained.	The responses given by the project participants during the communications with the validation team should be summarised in this section.	This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 1, under "Final Conclusion".	



2.5 Public Stakeholder Comments

The PDD was made publicly available through UNFCCC web site <https://cdm.unfccc.int/Projects/Validation/DB/BNSWZSAGLRSGRHW8JSR0RA4R2Y9N86/view.html> and parties, stakeholders and NGOs were through the CDM website invited to provide comments within 30 days from 20/04/2013 to 19/05/2013, received comments and CQC's responses are listed as follows.

Comments received (Submitted by jhoncraig):
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- | |
|---|
| <ol style="list-style-type: none">1) DOE to ensure that the PDD values are consistent and ensure that the CDM project is a genuine project.2) DoE to check the Detailed Project Report and Feasibility Report which is submitted to the other agencies and Banks by Project owner and ensure that the values match with the DPR/FR submitted to DoE also.3) Careful study must be done so that the DPR/FR is not in different versions made and submitted with different purposes to different agencies, which is totally unacceptable, illegal and unethical.4) Project owner should show some undertaking letter from bank manager to DoE stating that both DPR's are same. These kinds of letters should not be accepted and entertained by DoE at face value, but must be checked independently. While collecting the DPR/FR from banks and other agencies, all DPR/FR pages should be counter signed by Banks and other agencies so that the real DPR/FR given to other parties by the PP/Consultant is same as the one submitted to DOE.5) DPR/FR values must be probed fully. DOE must take a written undertaking from the PP/Consultant about the list of parties to whom this DPR/FR is submitted and for what purposes. Then DOE should cross check with all the parties and confirm that the same DPR/FR is submitted to all the parties correctly without any changes. DOE must not accept any reports and undertakings from PP/Consultant. DOE must make independent evaluation and use totally different parties without informing the PP or Consultant to cross check the facts.6) DOE to write to the party who prepared the DPR/FR which is submitted to the banks and other agencies and the same is verified against the one submitted to the DOE by PP/Consultant.7) DOE must not entertain this project any more if found the DPR/FR is tampered with at any point in time. PP can not give different DPR's and FR's. They must submit only the one given to Banks and other agencies while obtaining loans and decision making time.8) Has the PP considered the CDM revenues while envisaging the project? Without CDM the project was not viable, is it right? This project is having a debt component? Then how bankers or lenders gave the loan? Have the bankers or lenders considered the CDM revenues while agreeing to give loan to this projects? If not this project should be rejected right away by DOE by terminating the contract forthwith. If yes, where is the proof? What is the date of the evidence document from bank? Is this document printed now a days or earlier. DOE to independently check the same. If the document is available from Bank it must be checked from all angles so that it is genuine and not forged and date changed by putting back dated. This is normally done, DOE to be aware of this please. Please check the communication the PP had during that time with banks, emails and postal receipts and the weights and dates mentioned on the receipts. Do not believe in courier bills and receipts since these can be cooked up easily. Insist on government owned postal service receipts only. If the project is fully equity project then on what basis the PP has invested full equity in to the project while considering the CDM revenue? DOE to check the same in detail and bring out the facts. Is there any past record of this PP to invest or not to invest at returns what he is talking about in this project? Proper evidences must be reviewed and digged out by the DOE and take decision on the project based on established facts. Do not ask |
|---|



documents from PP, DOE to collect the same from different sources to do independent evaluation.

9) Is the project equipment purchased second hand equipment or sourced from cheap foreign sources? If yes, the issue must be probed by DOE since invoices will invariably be inflated and forged. Total project costs mentioned by PP will not be the same as originals. Hence no additionality. These facts must be probed in full by DOE by checking all documents and money transactions along with bank statements and certified accounts by a legally acceptable financial analyst.

10) From DOE side which auditor has done marketing and business development for acquiring this business of validating this project? With whom he or she was co-ordinating at PP or CER buyer? The same person who has done the marketing and business development to acquire the business do validation or participate in any manner what so ever in the validation process? One cannot do like that. It is against the accreditation rules and norms followed since ages. DOE should send auditors from different offices or countries to do this validation audit. DOE must take care of impartiality and accreditation rules. Due to the targets set by the DOE managements auditors are doing marketing and meeting clients and giving promises that the project will be taken care. Is it acceptable and fair? This must be stopped. No auditor should do marketing. Only non-auditing staff should do marketing. DOE to ensure the same please.

11) If applicable only: Is these machines, equipment was a part of any bundle of CDM activity envisaged and developed earlier. DOE to check the same through independent sources also. Once some bundles are non-additional and getting negative validation from a DOE, PP is rolling out the same project as an individual project which is not a CDM project at all. DOE to verify the same from independent sources and also take undertaking in the form of an affidavit from the PP's that any misrepresentation or false statement with respect this would attract strict legal action from UNFCCC and DOE. Furthermore the registered project must be de-registered in case of any future findings contradicting the submissions made by the project owner.

12) DOE to be more careful so that this is a genuine CDM project. What is the exact project cost? The project cost is covering what? Each value considered must be validated with proof. The machinery is second hand purchased or fresh and new from an OEM? In either case DOE to check all the quotations, proposals, purchase orders, invoices, way bills, transport bills, proof of payments like bank statements. DOE to check with banks by way of written confirmation the amount transacted, to whom the money is paid, when the money is paid, is the party paid is the correct party as shown in the purchase orders. It may so happen that the values, party names, dates are fabricated and misrepresented in this project. DOE should terminate their contract for this project immediately. This is the only way out to protect the value of CDM process. If the PP is purchasing second hand or second quality equipment and inflating the purchase order values and invoices, this must be probed thoroughly and real values to taken for additionality calculation. Then I'm sure the additionality is not there at all in such a situation.

13) How is the base line defined in this project? Is Base line hypothetically defined with no proper evidences and proper justification? In such case, DOE cannot take the base line as suggested by the PDD. Please check that there are real emission reductions beyond the real and factual base line. It may so happen that this project qualifies for no CER's. DOE cannot assume values and things as giving by this PP. Whatever values are considered throughout the project in all documents including the real DPR (not the one prepared for CDM, the one given to the banks and others), they must be validated, verified and double checked. Do not ask PP for DPR. Ask the parties who have been given DPR by the PP. Get directly from the bank and others by each page of the DPR and Feasibility report signed. Such document can be considered as a real DPR or FR. UNFCCC CDM process cannot be degraded by fabricating and misinterpreting the project base line and additionality.

CQC Response



To summarize, the above comments are mainly for the credibility of the FSR and real investment. The CQC validation team notices that other CDM projects also received the same comments from the same commenter, thus, the team has reasons to believe that these comments are not targeting at the proposed project specifically. However, according to articles 34-36 of VVS (Version 03.0), the team has conservatively taken these comments into account and detailed actions are listed as follows:

1. Credibility of the FSR

Document review

The team reviewed the original FSR which was completed in 03/2012 by Shanxi Province water conservancy and hydropower survey design institute and approved by Gansu Development and Reform Commission on 22/08/2012^{[3]/[4]}. The project information in FSR and its approval are consistent with each other.

On-site interview:

During on site visit, CQC validation team has interviewed Mr. LI Xiaoping (Development and Reform Bureau of Zhangye) that whether the FSR provided to Gansu Development and Reform Commission for approval was the same as the FSR provided for validation. Mr. LI gave the positive response and confirmed that no other versions of the FSR had ever been observed by Development and Reform Bureau of Zhangye.

2. Credibility of the investment

Since the project was on operation at the time of on site visit, the validation team checked the installed facilities and confirms that all the facilities are new purchased. The team also reviewed all the main contracts for the project construction, loan contract with the bank, it is confirmed that the actual investment is basically consistent with estimation in FSR (see detailed validation for the investment on section 3.8 of this report).

Therefore, according to VVS (Version 03.0), CQC validation team confirms that:

- Other CDM projects also received the same comments from the same commenter, these comments are not targeting at the proposed project specifically;
- There is no evidence indicating that the FSR provided for approval and for validation is in different version;
- The FSR is a creditable evidence for investment decision. The estimated investment in FSR can be proved reasonable by the actual investment. No existing facilities and second hand equipments was adopted by this project.

2.6 Final Validation Report

The draft validation report containing a set of CARs & CL was submitted to the PP to be confirmed and to take some corrective actions for addressing the CARs and CL issued by CQC. After reviewing the revised and resubmitted project documentation and verifying the resolutions of corrective actions and clarifications, CQC issued this final validation report.

2.7 Internal Quality Control

According to CQC internal procedure CDMP08, this final validation report including the initial validation findings underwent a technical review before being submitted to PP and requesting registration of the project activity. The technical

review was performed by two technical reviewers qualified in accordance with CQC's internal procedure CDMP 01.

3 VALIDATION FINDINGS

As mentioned above all findings are summarized in table 1 of the attached validation protocol.

3.1 Approval

The project participant is Gansu Heihe Hydropower New Energy Development Co., Ltd. as the project owner from the host Party China.

CQC has received the Letter of Approval (LoA)^{/9/} of China from project owner, and assessed the authenticity and validity by investigating the website of China's DNA. The LoA confirms that:

- a) China is a Party to the Kyoto Protocol;
- b) Participation of the proposed CDM project is voluntary;
- c) The proposed CDM project activity contributes to the sustainable development in China.

The validation team does not doubt the letter's authenticity by checking the relevant official information.

CQC confirms that the project participant involved have been approved by China's DNA and listed in tabular form in section A.4 and Appendix 1 of the final PDD.

3.2 Authorization

China as a non Annex-I Party meets all relevant requirements to participate in the CDM. <http://maindb.unfccc.int/public/country.pl?country=CN> .

The project participant being listed in tabular form in section A.4 of the PDD is consistent with the contact details provided in Appendix 1 of the PDD. It is also confirmed that no entities other than those approved as project participants are included in these sections of the PDD.

The validation for the project financing did not reveal any information that indicates that the project can be seen as a diversion of official development assistance (ODA) funding towards China.

3.3 Contribution to Sustainable Development

China's DNA has confirmed the contribution of the proposed CDM project activity to the sustainable development of China in the LoA. According to the PDD, the project can contribute to sustainable development in various aspects

such as Economic Development, Environment Protection and Social Contribution.

3.4 Modalities of Communications

The validation team has performed the due diligence on the MoC Statement and its annex 1 in accordance with the requirements established in Paragraph 53-57 in VVS (Version 03.0).

The validation team received the MoC Statement and it's Annex^{/10/} from Gansu Heihe Hydropower New Energy Development Co., Ltd. which has contractual relationship with CQC, it is confirmed that the MoC statement and its Annex comply with all relevant forms and requirements.

The validation team also checked the written confirmation^{/11/} provided by Gansu Heihe Hydropower New Energy Development Co., Ltd. It is confirmed that Mr. DU Yong from Gansu Heihe Hydropower New Energy Development Co., Ltd has the authority to do so.

The MoC statement and the written confirmation were provided to CQC through the official mailbox of Gansu Heihe Hydropower New Energy Development Co., Ltd.

CQC validation team confirms the corporate identity of project participant and focal points included in the Modalities of Communication (MoC) statement, as well as the personal identities, including specimen signatures and employment status, of their authorized signatories are valid and accurate.

Nevertheless, the "Modalities of Communication statement" and its annex 1 were not provided at the time of onsite visit. With regard to this point, CAR 1 was raised in the course of validation and successfully closed after all related documents were provided. (ref Annex: Validation Protocol - Table 2).

3.5 Project Design Document

Generally, the PDD was completed according to Guidelines for completing the project design document form (version 01.0) (EB 66, Annex 8)^{/19/} which is the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website. CQC validation team confirms the compliance of the PDD with the Guidelines.

3.6 Description of project activity

Through reviewing the FSR^{/3/}, FSR approval^{/4/}, EIA^{/4/}, EIA approval^{/5/}, reference on the related website and follow-up interview with the officials of Development and Reform Bureau of Zhangye and Environment Protection Bureau of Zhangye, the validation team confirms that:

The objective of the project activity is to generate electricity by installation of photovoltaic panels so as to reduce GHG emissions by replacing electricity of Northwest China Power Grid (NWCPG) which predominantly uses fossil fuels.

The project is a solar power project located at Ganzhou District Zhangye city, Gansu province, P.R.China; it introduces photovoltaic panels with capacity of 50 MWp. The types and key technical parameters of the photovoltaic panels listed in the final PDD are consistent with that in technical specification provided by the manufactory. It was noticed that, as per the PV Module purchase contract^{/42/}, the actual installation of the project is 50.225MWp, which is different from the FSR. The validation team has checked the installed facilities onsite and confirms that the slight difference will not impact the additionality of the project.

The technology is deemed to reflect current good practice. According to the EIA report^{/5/}, various social, economic and environmental benefits will be achieved such as increasing the share of the renewable energy, creating employment opportunities, reducing greenhouse gas emission and helping developing the local economy. The project is expected to supply 71,125 MWh electricity to NWCPG annually, which will lead to average 67,177 tCO₂e of emissions reduction per year (during the first crediting period).

The project's boundary is clearly defined as the project electricity system - Northwest China Power Grid^{/30/} (NWCPG).

The expected operational lifetime of the project activity is 25 years. A renewable crediting period of 7 years was chosen for the project, starting from 01/07/2013. As verified by the validation team, the selection of the starting date of crediting period is appropriate and deemed reasonable.

Therefore, through documents review and on-site assessment, the validation team confirms that the project description in the final PDD is accurate and complete.

3.7 Application of the Selected Baseline and Monitoring Methodology

(a) General

CQC confirms that the selected baseline and monitoring methodology is the approved methodology ACM0002 (Version 13.0.0), titled "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".

CQC also confirms the application of the selected methodology with respect to project boundary, baseline identification, algorithms and/or formulae used to determine emission reductions, additionality, monitoring methodology in the later chapters and articles of this report.

(b) Applicability of the selected methodology to the project activity

The validation team checked the version of ACM0002 (Version 13.0.0) during document review and confirms that:

- The approved methodology is correctly quoted.

- The applied baseline methodology ACM0002 (Version 13.0.0) is justified as it has been demonstrated that the project activity ensures that:
 - ✓ the proposed project is a grid-connected renewable power generation project and the project does not involve fuel switching from fossil fuels;
 - ✓ The project boundary is defined as the project power plant and all power plants connected physically to the Northwest China Power Grid (NWCPG), which is in line with the delineation of grid boundaries as provided by China's DNA^{/30/}.

The project activity is not expected to result in emissions other than those allowed by ACM0002 (Version 13.0.0).

Therefore, CQC validation team confirms that the project activity meets the applicability conditions of ACM0002 (Version 13.0.0).

(c) Project boundary

The spatial extent of the project boundary includes the proposed project and all power plants connected physically to the electricity system which includes project electricity system. In this specific case, the power generated by proposed project will be transferred to the NWCPG, which is the project electricity system.

CQC validation team checked the website^{/30/} and verified the determination of the project boundary during on-site visit of the project site. CQC validation team confirms that the determination of the project boundary is reasonable.

The source and GHG included in the project boundary is CO₂ emission of baseline scenario, and the emission is zero for the project emission and leakage, as listed in the following table:

Table 4 Emission sources included from the project boundary

I	GHG included	Justifications and explanations
Baseline emission	CO ₂	NWCPG (Main source emission)
Project emission	N/A	Project emission is regarded as zero for the photovoltaic power.
Leakage	N/A	There are no leakages needed to be considered according to ACM0002 (Version 13.0.0).

This description of source and GHG included and their justifications are in line with ACM0002 (Version 13.0.0).

(d) Baseline scenario identification and description

As per the approved baseline methodology ACM0002 (Version 13.0.0), the baseline scenario is the electricity delivered to the grid by project activity would have otherwise been generated by the operation of grid-connected power plant and by the addition of new generation sources connected to the NWCPG.

CQC validation team confirms that the baseline for the proposed CDM project activity reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed CDM project activity.

(e) Algorithms and/or formulae used to determine emission reductions

The baseline emission under the methodological tool “Tool to Calculate the Emission Factor for an Electricity System” (Version 03.0.0) is calculated by multiplying the electricity baseline emission factor or grid emission factor ($EF_{grid,CM,y}$) and the net electricity exported to the grid.

$EF_{grid,CM,y}$ is estimated as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) factors. PP applied the calculations of $EF_{grid, simple OM,y}$, $EF_{BM, y}$ and $EF_{grid,CM,y}$. In the calculations, $EF_{grid,CM,y}$ is estimated based on three years average (2008-2010) of Simple operating margin and 20 % build margin of current year (2008-2010). CQC checked the calculation process on the website <http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File2975.pdf> and the information provided in Appendix 4 of PDD in detail.

Baseline emissions:

In accordance with the methodology ACM0002 (Version 13.0.0), baseline emissions for the year y are calculated as:

$$BE_y = EG_{facility,y} \times EF_{grid,CM,y}$$

Where:

BE_y - the baseline emissions in year y (tCO_2/yr);

$EG_{facility,y}$ - Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh), $EG_{facility,y} = EG_{export y} - EG_{import, y}$;

$EG_{export y}$ (the quantity of electricity exported to the grid in year y (MWh))

$EG_{import, y}$ (the quantity of electricity imported from the grid in year y (MWh))

$EF_{grid,CM,y}$ - the Combined Margin CO_2 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” (Version 03.0.0).

For the calculation of Combined Margin CO_2 emission factor, $EF_{grid,CM,y}$, the methodology refers to the “Tool to calculate the emission factor for an electricity system” (Version 03.0.0). In accordance with this tool, the baseline emission factor is calculated as a combined margin: a weighted average of the operating margin emission (OM) factor and the build margin (BM) emission factor. Both the OM and BM emission factors are calculated ex-ante and will not be updated during the first crediting period.

However, CAR 2 was raised as the annual emission reductions during the first 7-year crediting period are not correctly calculated in section B.6.4 of PDD version 01. The PDD version 02 has been revised on this section and the

validation team confirms that the calculation is correct, therefore, CAR 2 was successfully closed (ref Annex: Validation Protocol - Table 2).

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Project emission and leakage:

In accordance with the methodology, project emissions and leakage are both zero.

Emission reductions:

Emission reductions are calculated in accordance with methodology ACM0002 (Version 13.0.0) as follows:

$$ER_y = BE_y - PE_y - LE_y$$

Where:

ER_y -emission reductions in year y (tCO₂e/yr);

BE_y -baseline emissions in year y (tCO₂e/yr);

PE_y -project emissions in year y (tCO₂e/yr);

LE_y -Leakage in year y (tCO₂e/yr).

Therefore, CQC validation team confirms that the project emissions, baseline emissions and leakage and emission reductions are complied with the requirements of the selected baseline and monitoring methodology ACM0002 (Version 13.0.0).

CQC confirms that:

- all assumptions and data used by the PP are listed in the PDD, including their references and sources;
- all documentation used by the PP as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;
- all values used in the PDD are considered reasonable in the context of the proposed CDM project activity;
- the methodology ACM0002 (Version 13.0.0) and *Tool to calculate the emission factor for an electricity system* (Version 03.0.0) have been applied correctly to calculate project emissions, baseline emissions, leakages and emission reductions;
- all estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.

3.8 Additionality

The additionality of the project has been carefully checked. In doing so the validation team has put the main focus on the following issues.

(a) Assessment of prior consideration of the clean development mechanism



The project starting date was determined as 08/05/2012, the date when the PV Module purchase contract was signed^{/42/}. It is determined correctly in accordance with the definition of the project starting date as defined in the Glossary of CDM Terms (Version 06)^{/38/}.

The date of publication of the PDD on UNFCCC website for stakeholder comments is on 20/04/2013, which is later than the project starting date 08/05/2012. As per the PCP^{/25/}, the PP informed the Host Party DNA and UNFCCC secretariat on 18/10/2012 (got confirmed on 25/10/2012) and 18/10/2012 respectively.

The validation team has checked the notification letters^{/12/} and the website of china DNA and UNFCCC, it is confirmed that the PP has informed host country DNA and EB within 6 months after the project starting date. The validation team deems the proposed project is appropriate in terms of the prior consideration of the CDM and in line with the PCP (version 03.1)^{/25/}.

(b) Identification of alternatives

According to ACM0002 (Version 13.0.0) and relevant requirements of the Validation and Verification Standard (VVS), the baseline scenario of the project is: Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plant and by the addition of new generation sources connected to the NWCPG.

According to ACM0002 (Version 13.0.0), the alternatives Identification process is skipped by PP and no further analysis is stated in the PDD, CQC validation team confirms the identification of the alternative process is reasonable, which is in line with the VVS (Version 03.0).

(c) Investment analysis

As the project generates financial and economic benefits by selling electricity to the power grid company other than CDM related income, a simple cost analysis (Option I) of Tool for the Demonstration and Assessment of Additionality cannot be applied. Furthermore, the alternative for the baseline scenario of the proposed CDM project is not a similar investment project, so investment comparison (Option II) is also not an appropriate choice.

Therefore a benchmark analysis (Option III) is selected for conducting the investment analysis.

CQC has adopted five gradational steps to assess the veracity of the conclusion drawn by PP based on "Tool for the Demonstration and Assessment of Additionality (Version 07.0.0)" as well as Guidance on the Assessment of Investment Analysis (Version 05) and VVS (Version 03.0):

- I To confirm the suitability of the benchmark applied for the type of financial indicator presented;



- II To determine the reliability and validity of data sources used in calculating the financial indicator;
- III To cross-check the consistency of data and parameters against data sources, third-party, publicly available sources or the parameters used by other similar projects;
- IV To examine the correctness of computations carried out and documented;
- V To analyze the sensitivity to determine under what conditions variations in the result would occur, and the likelihood of these conditions.

I) To Confirm the Suitability of the Benchmark Applied for the Type of Financial Indicator Presented

PP has chosen IRR (total investment and after tax) as financial indicator to demonstrate the additionality of the project. According to sub-step2b Option III of Tool for the Demonstration and Assessment of Additionality (Version 07.0.0), the discount rates and benchmarks shall be derived from (a) - (e), among them (d) is "Government/official approved benchmark, where such benchmarks are used for investment decisions".

In addition, it is imperative that the benchmark selected should be suitable for the type of financial indicator presented. PDD used the benchmark of 8% according to the authoritative reference ---- *Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects*^{13/}, which is deemed an appropriate benchmark reference for power generation projects investment in China and also widely applied in most of CDM registered photovoltaic power projects in China.

Therefore, CQC validation team confirms that the benchmark IRR (8%, total investment and post tax) used in the investment analysis can thus be considered reliable and valid.

II) To Determine the Reliability and Validity of Data Sources Used in Calculating the Financial Indicator

All data used in IRR calculation was derived from the FSR which was finished in 03/2012, the investment decision was made on 11/04/2012^{8/}.

The validation team considers that the period of time between the finalization of the FSR and the investment decision is sufficiently short, and that it is unlikely in the context of the underlying project activity that the input values would have materially changed. Therefore, FSR has been the basis of the decision to proceed with the investment in the project.

Therefore, the validation team confirms that the financial indicators (input values) used in the investment analysis can thus be considered information provided by a reliable and valid source.

III) To Cross-check the Consistency of Data and Parameters against Data Sources, Third-party, Publicly Available Sources or the Parameters Used by Other Similar Projects



The values used in the PDD (Version 02) have been crosschecked against the FSR and third-party publicly available sources or the parameters used by other similar projects. Details on how the values of key data and parameters being independently checked by CQC as per the requirement of VVS (Version 03.0) paragraph 122.c are presented below (table 5):



Table 5 Key input values such as tariff, annual operating hours (PLF), annual O&M cost, static total investment;

Parameters	Input values	Data sources indicated in PDD	Other information sources used by CQC to cross check or other appropriate manner	CQC's Confirmation
Tariff	1.0 CNY/kWh (Inc. VAT)	FSR	- This tariff was used in the financial assessment in FSR. - The National Development and Reform Commission issued the “<i>Notice on the on-grid tariff management policy for solar PV power generation from NDRC of China</i>”, Fagaijiage [2011] No.1594, on 24/07/2011^{/14/}. It is stated that the tariff is 1.0 CNY/kWh (Inc. VAT) for the projects which were approved after 01/07/2011. Since the project was approved on 22/08//2012, the applicable tariff for the project is 1.00 CNY/kWh (Inc. VAT). This was also confirmed by the representative from Development and Reform Commission of Zhangye during on-site visit - This tariff was also applied in the Power Purchase Agreement (PPA), which was signed with local grid company in 11/2012. - Currently, there are 16 projects located in Gansu that have been published on EB website, among which 9 project have available tariff: the tariff of Ref No 5229, 5677, 5934 and 8466 came from a bidding process, prior to the issuing of this pricing policy^{/14/} for photovoltaic power projects. Besides that, Ref No 7882 was approved before 01/07/2011, so its tariff is 1.15 CNY/kWh (Inc. VAT) according to “<i>Notice on the on-grid tariff management policy for solar PV power generation from NDRC of China</i>”, all other projects was approved after 01/07/2011 and applied the same tariff 1.00 CNY/kWh (Inc. VAT) as the proposed project. It is concluded that the tariff of similar project in Gansu is determined as per “<i>Notice on the on-grid tariff management policy for solar PV power generation from NDRC of China</i>” since its publication, therefore, the tariff of the project 1.0 CNY/kWh (Inc. VAT) is reasonable. (see following table 6)	CQC validation team confirms that: - the tariff is derived from FSR ; -the tariff is in line with the relevant documents issued by Chinese government and actual PPA signed with grid company;
Annual operating hours (PLF)	1,422h (0.1623)	FSR	- The annual operating hours (or PLF) of the project activity is determined by Shanxi Province water conservancy and hydropower survey design institute and approved by Development and Reform Commission of Gansu Province which is in line with the Guidelines for the Reporting and Validation of Plant Load Factors (EB48, Annex 11)^{/15/}. - Through reviewing the FSR, CQC validation team found that the annual operating hours at full capacity is calculated based on 16 years (1993-2008) data of weather statistic data provided by local meteorological station and resources measurements. Therefore, through applying our sectoral expertise and cross-checking with the FSR, third-party publicly available sources and the parameters used by other similar projects, CQC validation	CQC confirms that the annual operating hours 1,422 h (PLF, 0.1623) of the project is reasonable. CQC validation team also confirms that the annual operating hours (or PLF) of the project is from the FSR which is determined by a third party and approved by



			team confirms that the annual operating hours (PLF) of the project is reasonable.	Development and Reform Commission of Gansu province which is in line with the Guidelines for the Reporting and Validation of Plant Load Factors (EB 48, Annex 11).														
Static total investment	620.6686 million CNY	FSR	- The static total investment cost ratio of the proposed project is 12,413 CNY/kW (620.6686 million Yuan RBM/50MWp). - CQC validation team has cross-checked the static total investment per kW with similar projects in Gansu and found that the value of the proposed project (12,413 CNY/kW) is lower than the normal range (16,842~20,037CNY/kW) of the similar projects listed in table 6. - By applying sectoral expertise and available information, CQC validation team has carefully checked the total investment (620.6686 million CNY) of the project as followings: Through checking the FSR, CQC validation team found that the composition of the total investment of the project includes <table><tr><th>Items</th><th>Components</th><th>Total (million CNY)</th></tr><tr><td>Equipment pruchase</td><td>Power generation equipment, power supply equipment, communication and control equipment, air condition equipment, lighting equipment, fire control equipment etc.</td><td>388.5903</td></tr><tr><td>Installation project</td><td>The installation of every equipments mentioned above.</td><td>56.3239</td></tr><tr><td>Construction project</td><td>The base project of the power generation and supply equipment, power house, road, support project, etc.</td><td>99.5209</td></tr><tr><td>Others</td><td>land use fee, management fee, design fee, producing preparation fee, interest during construction, etc.</td><td>76.2335</td></tr></table> According to the FSR, the investment was estimated based on the following standard. * The price of PV module, inverter and transformer are sourced from the contract price of similar project; * the material price is souced from the average market price level of Gansu; * airtificial price is determined based on the <i>design budget method and the calculation standard of Wind power project feasibility study report</i>; - According to the existing contracts provided by the project owner (The PV Module purchase CQC validation team confirms that the static total investment of the project is reasonable.	Items	Components	Total (million CNY)	Equipment pruchase	Power generation equipment, power supply equipment, communication and control equipment, air condition equipment, lighting equipment, fire control equipment etc.	388.5903	Installation project	The installation of every equipments mentioned above.	56.3239	Construction project	The base project of the power generation and supply equipment, power house, road, support project, etc.	99.5209	Others	land use fee, management fee, design fee, producing preparation fee, interest during construction, etc.	76.2335
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			contract of the project, the EPC contract of the project, the power transmission project contracts, the project design contract, the construction contract of the auxiliary system, etc.) ^{/43/} , the total investment of this project has reach to 619.864 million CNY, which is 99.87% of the estimated value in FSR.	
Annual O&M cost	9.159965 million CNY/year	FSR	The percentage of annual O&M cost relative to static total investment is 1.47%. (9.159965million CNY/620.6686million CNY). - CQC validation team has cross-checked the percentage of annual O&M cost relative to static total investment of the proposed project with the similar projects in Gansu, it is found that the value of the proposed project activity 1.47% is in the middle (0.73%~1.53%) of these projects listed in table 6. - Applying our sectoral expertise and cross checking with other information sources, CQC validation team confirms that the value of annual O&M cost is reasonable. Details are listed as followed: Maintenance fee: maintenance fee is 0.7% of the static investment after equipment VAT deduction, which is reasonable according to our sectoral expertise Payroll and welfare: the payroll and welfare 1.8 million Yuan per year (the number of employee is 30 person, the annual average payroll is 40,000 Yuan per person, the welfare rate is 50% of annual payroll, including: ✓ the welfare fee rate 14%; ✓ labor insurance rate 21%; ✓ housing fund 12%; ✓ education funds 1% ✓ labor union expenditure 2% The welfare rate 50% is derived from FSR and is reasonable and in line with the wages criterion of Gansu^{/37/}. These elements were also confirmed by Development and Reform Bureau of Zhangye during the on-site assessment. Insurance for fixed assets: the cost of insurance for fixed assets is 0.25% of original value of fixed assets after deduction which is consistent with other solar PV projects located in Gansu and reasonable considered by CQC validation team. Material cost and Miscellaneous expenses: material cost (15 CNY/kW) and Miscellaneous expenses (consists of other management expense, other manufacture expense and other operating expense) (25CNY/kW) are all reasonable considered by CQC validation team. Even these two costs are down to zero, the IRR will be 7.18%, still lower than the benchmark.	CQC validation team confirms that the annual O&M cost of the project is reasonable.



Table 6 the similar projects registered as CDM projects (All solar power project in Gansu that have been published on EB website)

Ref.	Title	Installed capacity	Feed-in tariff (including VAT)	Unit Static Investment	PLF (Annual operation hours/8760)	Ratio of annual O&M cost to static total investment
		MW	RMB/Kwh	RMB/KW	%	%
5229	Wuwei Fengle Solar PV Power Project (Phase I) in Gansu Province	10	1.0928	20,037	17.67%	0.89%
5677	Huadian Gansu Jiayuguan 10MWp Grid-connected Photovoltaic Power Project	10	1.0900	17,055	17.31%	1.53%
5716	Gansu Jinta Photovoltaic Power Project	10	/	/	17.93%	/
5752	CGN Dunhuang 10MW Grid-connected Solar PV Power Generation Project	10	/	/	20.60%	/
5934	Gansu Dunhuang 10MWp Photovoltaic Power Generation Project	10	1.0928	17,513	17.47%	1.29%
6706	Gansu Zhangye 10MW Solar Power Project	10	/	/	18.93%	/
7206	Gansu Huadian Minqin 10MWp Solar PV Power Station Project	10	/	/	19.88%	/
7530	Gansu Dunhuang 50MWp Solar PV Power Station Project	50	1	18,877	17.86%	0.73%
7728	Datang Renewable Power Suzhou District Dongdongtan Grid-connected PV Power Project	10	/	/	19.64%	/
7869	Dunhuang 9MW solar power project	9	/	/	17.39%	/
7882	CECEP Gansu Wuwei Solar Power Co., Ltd. Liangzhou District Nandatan 20 MWp PV Power Project	20	1.15	18,610	18.18%	1.04%
7973	CGN Jinta Hongliuwa 9MW Grid-connected PV Power Generation Project	9	/	/	17.20%	/
8327	CGN Dunhuang Phase II 9MW Grid-connected PV Power Generation Project	9	1	17,626	19.25%	1.28%
8437	Gansu Wuwei Grid-connected 10MW Solar Power Generation Project	10	/	/	17.98%	/
8466	SDIC Dunhuang First Phase and Second Phase Bundled Grid-connected Photovoltaic Power Generation Project	9	1.09	19,135	18.36%	1.27%
		9	1	16,842	18.40%	1.34%
8765	Huaneng Gansu Jinchang 20MWp Gridconnected Solar PV Power Generation Project	20	1	17,774	20.36%	1.19%
Range		9~50	1~1.0928	16,842~20,037	17.20%~20.6%	0.73%~1.53%
Proposed project		50	1	12,413	16.23%	1.48%

- Self-consumption rate & the transmission losses rate

Both the self-consumption rate (0%) and the transmission losses rate (0%) are determined in the FSR. CQC validation team confirmed that these values are all acceptable.

-Depreciation

CQC validation team has checked the depreciation of fixed assets. According to FSR of the project, the financial analysis uses 20 years as depreciation period and the depreciation rate is 4.75% (residual value rate at 5%).

The FSR estimated the residual value rate (5%) in accordance with (Guoshuihan [2005] No. 883)^{31/} issued by the National Tax Bureau on 14/09/2005, which indicates residual value should be estimated no more than 5% of fixed asset. Therefore, CQC validation team confirms that the residual value rate (5%) is reasonable.

CQC validation team interviewed the PP with depreciation period during the on-site interview. Accounting Standards for Business Enterprises (No.4)-Fixed Assets (Caikuai [2006] No.3)^{32/} which was issued by the Ministry of Finance, states that the enterprise should determine the working life and residual value of the fixed assets reasonably according to the fixed asset characteristics and using condition. Besides, as per the description of the Economic Assessment Method and Parameters for Construction Project (Third Edition)^{33/}, the composite depreciation period of the fixed assets can be applied in the financial assessment of project as required by the related industries. Hence the PP and the FSR design institute selected 20 years as the Composite Depreciation Year to simplify the calculation process.

Therefore, CQC validation team confirms that the composite depreciation period of 20 years applied to the proposed project is considered reasonable.

.-Income tax

- CQC validation team has cross checked the income tax 25% with “Enterprise Income Tax Law of the People's Republic of China” issued on 16/03/2007^{39/} and found that the value 25% is consistent with the Law. According to the Guidelines on the Assessment of Investment Analysis (Version 05)^{27/}, the interest payable should be taken into account of the income tax calculation in cases where the benchmark applied in the investment analysis is post tax. As for the proposed project, the IRR benchmark of 8% is post tax and the interest tax payable has been verified to be included in the calculation of the income tax.

CQC validation team confirms that the calculation is conservative and acceptable.

-VAT

According to the “Decree No. 538 of State Council: Provisional Regulations of People's Republic of China on Value Added Tax (revised version)” issued on 10/11/2008 and valid since 01/01/2009^{41/}, the value added tax is defined as 17% for the electricity and equipment sales. Besides the equipment VAT (17%) can

be rebated over the operation period against the VAT for electricity sale until the VAT from the equipment is fully recovered. CQC validation team has checked the PDD and IRR calculation spreadsheet, and confirms that the value of VAT (17%) is correctly applied and tax benefits prescribed in related regulations have already been taken into account in IRR calculation.

-Urban Maintenance and Construction Tax and educational surtax

The urban maintenance and construction tax of 5% on a basis of VAT sourced from FSR is consistent with the “Provisional Regulations on Urban Maintenance and Construction Tax” valid since 1985^{/20/}. The educational surtax of 3% (of the VAT) and local education surtax 2% (of the VAT) sourced from FSR are consistent with the ‘Decision on the Revision of the “Provisional Regulations on Levying Education Surtax” issued by the Stated Council on 20/08/2005 and valid since 01/10/2005^{/20/} and “The notification on Levying Local Education Surtax” issued by Ministry of Finance of China on 07/11/2010 and valid since then, respectively.

-Loan interest rate

- CQC validation team has cross checked the loan interest rate (7.05% for long term loan and 6.56% for short term loan) and found that the data are derived from FSR and in accordance with the benchmark loan interest rate published by the People’s Bank of China at the time of FSR completion^{/39/}. Therefore, it is confirmed that the loan interest rates used in the IRR calculation is reasonable.

Therefore, CQC validation team by applying its sectoral expertise confirms that the decision to invest in the project made on the basis of the input values from the FSR that were valid and applicable at the time of the investment decision and that the input value parameters used in the financial analysis are reasonable and adequately compared with the FSR and third-party publicly available sources or the parameters used by other similar projects.

IV) To examine the correctness of computations carried out and documented

The project’s IRR (total investment and post tax) without CER revenues is 6.83%, which shows that the project is not financially attractive compared with the benchmark (8%) in absence of CDM benefits.

CQC validation team also checked the IRR spreadsheet and confirms that the actual interest payable has been taken into account in the calculation of income tax, which is in line with the Guidance on the Assessment of Investment Analysis (Version 05.0)^{/40/} and the calculation result can be reproduced.

V) To analyze the sensitivity to determine under what conditions variations in the result would occur, and the likelihood of these conditions.

A sensitivity analysis in PDD shows the changes in four critical parameters (static total investment, annual operating cost, tariff and annual net electricity supplied to grid) can have a significant impact on project financial performance:

- **Static Total Investment**

When a decrease of 10.34% is assumed on static total investment, the IRR can reach the benchmark. However it is not likely that the total static investment will decrease so much. According to the existing contracts provided by the project owner (The PV Module purchase contract of the project, the EPC contract of the project, the power transmission project contracts, the project design contract, the construction contract of the auxiliary system, etc.)^{/43/}, the total investment of this project has reach to 619.864 million CNY, which is 99.87% of the estimated value in FSR and has crossed the critical point. .

- **Annual O&M Cost**

When the annual O&M cost decreases by 73.7%, the IRR will reach the benchmark 8%. Since the O&M costs is mainly determined by the employee welfare, maintenance fee, material costs, maintenance expenses and the price level of Gansu province increases a lot^{/44/}, it is unlikely that the IRR can reach the benchmark 8% through decreasing the annual O&M cost.

- **Tariff**

When an increase of 10.81% is assumed in tariff, the project IRR can reach the benchmark 8%. However it is extremely unlikely for the tariff of the proposed project to have such an increase rate as:

- The National Development and Reform Commission issued the “Notice on the on-grid tariff management policy for solar PV power generation from NDRC of China”, Fagaijiage [2011] No.1594, on 24/07/2011^{/14/}. It is stated that the tariff is 1.0 CNY/kWh (Inc. VAT) for the projects which were approved after 01/07/2011. Since the project was approved on 22/08//2012, the applicable tariff for the project is 1.00CNY/kWh (Inc. VAT). This was also confirmed by the representative from Development and Reform Commission of Zhangye during on-site visit.
- Secondly, the tariff is strictly regulated by China government and it is established on strict regulation rather than the market mechanism thus the tariff is related closely to the national economy and livelihood of people, the government of China has to keep the tariff steady.

Therefore, it is very unlikely that the IRR can reach the benchmark through increasing the tariff.

- **Annual operating hours (PLF)**

When an increase of 10.81% is assumed in average annual power generation, the project IRR can reach the benchmark of 8%.

As mentioned above, the average annual power generation, the operation hours and the installed capacity have been estimated based on the weather statistic data in the past 16 years provided by local meteorological station and solar resources measurement. Furthermore, the average annual power generation (annual operating hours or PLF) is determined by a third party design institute in the FSR approved by Gansu Development and Reform Commission which is in

line with the Guidelines for the Reporting and Validation of Plant Load Factors(EB 48 annex 11).

Therefore, it is extremely unlikely for the average annual power generation of the proposed project to have such an increase rate.

Therefore, CQC validation team confirms that the sensitivity analysis analyzed in the final PDD is in detail, and the underlying assumptions, parameters and chosen values are appropriate and that the calculations have been performed correctly.

(d) Barrier analysis

Barrier analysis is not selected by PP to demonstrate the additionality.

(e) Common practice analysis

As per the requirement of VVS (Version 03.0) paragraph 129, the DOE are required to use its local and sectoral expertise to:

- Assess whether the geographical scope (e.g. the defined region) of the common practice analysis is appropriate for the assessment of common practice related to the project activity's technology or industry type. For certain technologies the relevant region for assessment will be local and for others it may be transnational global. If a region other than the entire host country is chosen, the DOE shall assess the explanation why this region is more appropriate;
- Determine to what extent similar and operational projects (e.g. using similar technology or practice), other than project activities, have been undertaken in the defined region;
- Assess, if similar and operational projects, other than project activities, are already "widely observed and commonly carried out" in the defined region, whether there are essential distinctions between the proposed CDM project activity and the other similar activities.

Since the project utilize solar energy to generate electricity, it belongs to the measure II as per the Tool for the demonstration and assessment of additionality (Version 07.0.0)^{17/}, CQC validation team conduct the validation of common practice analysis by using Guidelines on common practice (version 02.0)^{26/} :

Step 1: Calculate applicable capacity or output range as +/-50% of the total design capacity or output of the proposed project activity.

The installed capacity of the proposed project is 50MWp. Therefore, the applicable output range is from 25 MWp to 75 MWp.

Step 2: identify similar projects (both CDM and non-CDM) which fulfill all of the following conditions:

- (a) The projects are located in the applicable geographical area;
- (b) The projects apply the same measure as the proposed project activity;
- (c) The projects use the same energy source/fuel and feedstock as the proposed

project activity, if a technology switch measure is implemented by the proposed project activity;

(d) The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g. clinker) as the proposed project plant;

(e) The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1;

(f) The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity.

The proposed project is located in Gansu Province. The validation team confirms that the selection of region for common practice analysis is reasonable for the reasons that different province in China has different pricing policy, geographical and geological conditions, climate conditions and development conditions for solar PV power projects, which is also in line with paragraph 129 (a) of VVS (Version 03.0) and Tool for the demonstration and assessment of additionality (version 07.0.0).

It is a power generation project by using renewable solar PV energy, the validation team confirms the selection of the project type for common practice analysis is reasonable.

The starting date of the proposed project is 08/05/2012. Therefore, all plants that deliver the same output, within the capacity of 25 MWp to 75 MWp, as the proposed activity and have started commercial operation before 08/05/2012 and are located in Gansu Province are identified (Registered CDM project activities and projects activities undergoing validation are not be included).

Step 3: within the projects identified in Step 2, identify those that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Note their number N_{all} .

After checking the China Electricity Year Book of 2005~2011, official website of Development and Reform Committee of Gansu province and official website of China DNA, as well as other sources (for example, search results from the famous search engines Baidu and Google etc. for solar PV power projects in Gansu Province), the validation team found that all solar PV power projects with capacity in the range of 25 MWp to 75 MWp in Gansu Province are registered as CDM projects or are undergoing validation. Thus, all solar PV power projects are excluded. Therefore, $N_{all}=0$

Step 4: Within plants identified in Step 3, identify those that apply technologies different that the technology applied in the proposed project activity. Note their number N_{diff} .

According to the analysis in step 3, all photovoltaic projects in Gansu are registered CDM project activities or undergoing validation. Therefore, N_{diff} is also 0.

Step 5: Calculate factor $F=1-N_{diff}/N_{all}$ representing the share of plants using technology similar to the technology used in the proposed project activity in all plants that deliver the same output or capacity as the proposed project activity.

$N_{all}-N_{diff}=0<3$.

Therefore, as per Tool for the Demonstration and Assessment of Additionality and article 129 of VVS (Version 03.0), CQC validation team through reviewing the available information, confirms that the proposed project is not a common practice.

3.9 Monitoring Plan

The project applies the approved monitoring methodology ACM0002 (Version 13.0.0) to develop the monitoring plan. The selected monitoring methodology is applicable for the project activity as it involves grid-connected renewable power generation using solar energy.

Parameters determined ex-ante

The combined margin emission factor of NWCPG is determined in line with Tool to calculate the emission factor for an electricity system. The weight of OM and BM is defined as 0.75: 0.25 for the first crediting period.

- OM emission factor calculation:

The simple OM method is selected because the low-cost/must-run resources constitute less than 50% of total grid generation in average of the five most recent years. Option C (based on data on the total net electricity generation of all power plants serving the system and the fuel types and total fuel consumption of the project electricity system.) is selected due to the fact that more disaggregated data are not available in NWCPG. Country specific data for net calorific value (**NCV_i**) of each type of fossil fuel, the IPCC 2006 default values for the oxidation factor of each type of fossil fuel and the total electricity delivered to NWCPG are selected and are deemed reasonable. The calculation used the default value from China Energy Statistical Yearbooks^{/28/} 2009-2011 and China Electric Power Yearbooks^{/27/} 2009-2011.

- BM emission factor calculation:

Because plant specific fuel consumption and electricity generation data is not public available in China, DNV requested guidance^{/29/} from EB for a deviation of the baseline methodology of AM0005 and received the following answers which are deemed to be applicable for the project.

(http://cdm.unfccc.int/UserManagement/FileStorage/AM_CLAR_QEJWJEF3CFBP1OZAK6V5YXPQKK7WYJ)

- Use of capacity additions for estimating the build margin emission factor for grid electricity.



- Use of weights estimated using installed capacity in place of annual electricity generation.
- Use the efficiency level of the best technology commercially available in the provincial/regional or national grid of China, as a conservative proxy, for each fuel type in estimating the fuel consumption to estimate the build margin (BM).

Since AM0005 has been replaced by ACM0002, the application of the above confirmation from EB to this project is deemed to be acceptable.

Parameters monitored ex-post

The methodology requires monitoring of the following parameters for photovoltaic projects:

$EG_{\text{facility},y}$ Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh), it is calculated by

$$EG_{\text{facility},y} = EG_{\text{export},y} - EG_{\text{import},y}$$

$EG_{\text{export},y}$ (the quantity of electricity exported to the grid in year y (MWh));

$EG_{\text{import},y}$ (the quantity of electricity imported from the grid in year y (MWh));

The operating margin and build margin emission factor are determined ex-ante, therefore the parameter monitored ex-post is the quantity of net electricity generation supplied by the project activity to the grid.

Management system and quality assurance

During the interview, CQC validation team was acquainted that the project owner is responsible for the management, monitoring and reporting of the proposed project, and will establish a CDM project management office and assign dedicated people responsible and reporting of the generation and emission reductions of the project activity.

The main meter M1 and its backup meter M2 (Bi-directional, accuracy: 0.5s or more accurate) will be installed at the substation and project site respectively, to measure the net electricity exported to and imported from the grid. This data will be measured continuously and recorded monthly; the recorded data can be crosschecked against the transaction records (balance bill or invoice).

The meter will be calibrated and tested annually by a qualified institute accepted by local grid company and PP. This was verified by CQC during the on-site assessment.

The project's monitoring plan has been described in PDD.

1. Operation and management structure of monitoring
2. Monitoring equipment and installation
3. Data collection and management
4. Quality assurance and quality control
5. Monitoring results and verification

Detailed procedures have been elaborated in the PDD. These will be maintained and implemented to enable subsequent verification of emission reductions.



The validation team confirms that the project participant has the ability to implement the monitoring plan. And the monitoring plan is in line with the requirement of the methodology ACM0002 (Version 13.0.0).

3.10 Environmental Impacts

An Environmental Impact Assessment (EIA) report has been conducted according to Chinese EIA law and got approved on 06/06/2012. The potential environmental impacts have been sufficiently identified in the Environmental Impact Assessment (EIA) report and described in the PDD. No significant environmental impacts are expected from the project activity.

Therefore, CQC validation team confirms that the PP has undertaken an analysis of the environmental impacts and the environmental impact assessment is in accordance with the procedures as required by the host party (China).

3.11 Local Stakeholder Consultation

In order to make the stakeholders receive information of the project activity, 30 questionnaires^{17/} were distributed to local stakeholders on 15/08/2012~16/08/2012, received 100%. The result of the survey indicated that all stakeholders are support to the construction and operation of the project activity, there were no adverse comments on the project activity.

During on-site visit, representatives from the local community were interviewed. In general, the interviewees think this project can bring benefit for the local social, economic and environmental development and express the opinion of supporting this project.

Therefore, CQC validation team confirms that the public consultation is effective, and the local stakeholder consultation for the proposed project is enough.

APPENDIX A: CDM Validation Protocol

Table 1 Validation checklist for Clean Development Mechanism (CDM) Project Activities

(MoV =Means of Validation, DR=Document Review, I=Interview)

Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
1. Approval					
1.1 Have the valid and complete letters of approval been received from the DNA(s) of the involved parties;	LoA	DR, I	CQC has received the Letter of Approval (LoA) of China from project owner, and assessed the authenticity and validity by investigating the website of China's DNA. The LoA confirms that: a) China is a Party to the Kyoto Protocol; b) Participation of the proposed CDM project is voluntary; c) The proposed CDM project activity contributes to the sustainable development in China. The validation team does not doubt the letter's authenticity by checking the relevant official information.	OK	OK
1.2 Did the DOE receive the letters from the project participants or directly from the DNA(s)?	LoA	DR, I	Idem.	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
1.3 Does the letter of Approval confirm that - the involved party is a Party to the Kyoto Protocol - the participation is voluntary; - In the case of the host Party, the proposed CDM project activity contributes to the sustainable development of the country; - It refers to the precise proposed CDM project activity title in the PDD being submitted for registration.	LoA	DR, I	Idem.	OK	OK
1.4 Do the letters of approval contain additional specification of the project activity, such as the PDD version number or validation report?	LoA	DR, I	Idem.	OK	OK
1.5 Are the letters of approval authentic? What means of validation is employed to assess the authenticity?	LoA	DR, I	Idem.	OK	OK
2. Authorization					
2.1 Are the project participants and Parties listed in tabular form in section A.4 of the PDD?	PDD	DR	Yes, The project participant and Party are listed in the section A.4 of the PDD.	OK	OK
2.2 Which Parties and project participants are participating in the project?	PDD	DR	- Gansu Heihe Hydropower New Energy Development Co., Ltd. as the project owner from the host Party China.	OK	OK
2.3 Is the information in A4 consistent with the	PDD	DR	Yes. The information in A.4 is consistent with the contact	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
contact details provided in annex 1 of the PDD?			details provided in Appendix 1.		
2.4 Has the participation of each project participant been approved by at least one Party involved? (in a letter of approval or in a separate letter specifically to approve participation)	PDD	DR, I	See section 1.1.	OK	OK
2.5 Are there any other entities than those approved as project participants included in PDD?	PDD	DR, I	No any other entities are included as project participants in the project.	OK	OK
2.6 Has the approval of participation been issued from the relevant DNA?	PDD	DR, I	See section 1.1.	OK	OK
2.7 Is the approval of participation valid?	PDD	DR, I	See section 1.1.	OK	OK
2.8 Are the potential public funding for the project from Parties in Annex I a diversion of official development assistance?	PDD	DR, I	No, There is no any public funding for the project from Parties in Annex I.	OK	OK
3. Contribution to sustainable development					
3.1 Has the host Party's DNA confirmed the contribution of the project to the sustainable development of the host Party?	PDD LoA	DR, I	Yes. See section 1.1	OK	OK
3.2 Will the project create other environmental or social benefits than GHG emission reductions?	PDD LoA	DR, I	Yes. As discussed in PDD and confirmed during on-site interview with local stakeholders, several more benefits would be expected such as providing public welfare with tax which will be obtained from the construction and operation of the project, generating electricity to meet the	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
			increasing demand, creating employment opportunities for the local residents.		
4. Modalities of communications					
4.1 Have the corporate identities of all project participants and focal points included in the MoC statement been validated by using the following methods: (a) Directly checking evidence for corporate, personal identification and other relevant documentation; (b) Notarized documentation; or (c) Written confirmation from the project participant or the coordinating/managing entity that submits to it the MoC statement that all corporate and personal details, including specimen signatures, are valid and accurate.	MoC	DR, I	Yes, the methods were used during the validation of the MoC statement and its annex 1 The “Modalities of Communication statement” and its annex 1 were not provided at the time of onsite visit.	~~CAR-1~~	OK
4.2 Was the MoC statement received from a project participant with whom the DOE has a contractual relationship?	MoC	DR, I	The “Modalities of Communication statement” and its annex 1 were not provided at the time of onsite visit Latterly, the validation team received the MoC Statement and it's Annex from Gansu Heihe Hydropower New Energy Development Co., Ltd. which has contractual relationship with CQC, it is confirmed that the MoC statement and its Annex comply with all relevant forms and requirements.	~~CAR-1~~	OK
4.3 Are the official who submits the MoC statement to the DOE and the official who signed the written confirmation (if a different person) duly authorized to do so on behalf	MoC	DR, I	The validation team also checked the written confirmation provided by Gansu Heihe Hydropower New Energy Development Co., Ltd. It is confirmed that Mr. DU Yong from Gansu Heihe Hydropower New Energy Development	~~CAR-1~~	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
of the respective project participant or coordinating/managing entity.			Co., Ltd has the authority to do so. The MoC statement and the written confirmation were provided to CQC through the official mailbox of Gansu Heihe Hydropower New Energy Development Co., Ltd. CQC validation team confirms the corporate identity of project participant and focal points included in the Modalities of Communication (MoC) statement, as well as the personal identities, including specimen signatures and employment status, of their authorized signatories are valid and accurate.		
4.4 Has the latest version of the form “Modalities of Communication statement” been used?	MoC	DR, I	Yes	~~CAR 1~~	OK
4.5 Is the information required as per the F-CDM-MOC, including its annex 1, correctly completed?	MoC	DR, I	Yes	~~CAR 1~~	OK
4.6 Do the project participant's authorized signatories signing the F-CDM-MOC correspond to the signatories included in F-CDM-MOC annex 1?	MoC	DR, I	Yes	~~CAR 1~~	OK
5. Project design document					
5.1 Is the format of the PDD current and valid version?	PDD	DR	Yes, the format of the PDD is current and valid version.	OK	OK
5.2 Is the PDD in accordance with the applicable CDM requirements for completing PDDs?	PDD	DR	Yes. For some sections, CQC raised the CARs and CL to PP.	OK	OK
6. Description of project activity					
6.1 Does the used project title clearly enable to identify the unique CDM activity?	PDD	DR, I	Yes.	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
6.2 Detailed description of the physical location, including information allowing the unique identification of the project activity.	PDD	DR	The Project is located in the southern area of Ganzhou District Zhangye city, Gansu province, P.R.China. The geographical coordinate range of the Project are 100°11'42.58" ~ 100°13'48.48" east longitude and 38°50'11" ~ 38°51'00" north latitude.	OK	OK
6.3 Does the description of the project activity in A.1 include: - the purpose of the project activity with a concise description; - the estimate of annual average and total GHG emission reductions for the chosen crediting period; - how the proposed project activity reduces GHG emissions; - identify the location of the project activity; - brief description of the technology to be employed; - the view of PP on the contribution of the project activity to sustainable development.; - the scenario existing prior to the implementation and the baseline scenario of the project activity	PDD (A.2)	DR	Yes, all the information are included in the description of the project activity in A.1 The actual installed capacity of the project was not clearly stated in section A.1 and A.3 of PDD version 01.	~~CL1~~	OK
6.4 Does the description of the technologies and measures include all the information requested by the relevant forms and guidance?	PDD	DR	Yes.	OK	OK
6.5 To which category (ies) does the project activity belong to? Is the category correctly	PDD	DR	Yes.	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
identified and indicated?			PP has identified and indicated the category correctly.		
6.6 Does the project qualify as a small scale CDM project activity and will it remain under the limits of small-scale project activity types during every year of the crediting period?	PDD	DR	N/A	N/A	N/A
6.7 Confirmation that the small-scale project is not a debundled component of a large scale project activity.					
6.7.1 Is the project a multiple CDM project involving independent subsystem/measures?	PDD	DR, I	No	OK	OK
6.7.2 Is there a registered small-scale CDM project activity or an application to register another small-scale CDM project activity that: a) With the same project participants; b) In the same project category and technology/measure; and c) Registered within the previous 2 years; d) Whose project boundary is within 1 km of the project boundary of the proposed small- scale activity at the closest point.	PDD	DR, I	N/A	N/A	N/A
6.8 If the answer to all the above question is 'Yes', then does the total size of the small scale project activity combined with previously registered small scale CDM project activity exceed the limits of small scale CDM project activities?	PDD	DR	N/A	N/A	N/A



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
7. Application of the selected baseline and monitoring methodology					
7.1 General requirement					
7.1.1 Do the baseline and monitoring methodologies selected by the project participants comply with the methodologies previously approved by the CDM Executive Board?	PDD	DR	Yes. The baseline and monitoring methodology selected by the project is ACM0002 (Version 13.0.0) and complies with the methodology previously approved by the CDM Executive Board.	OK	OK
7.1.2 Is there any specific guidance or clarification provided by the CDM EB in respect to the applied approved methodology? If so, is the specific applied correctly?	PDD	DR	No.	OK	OK
7.1.3 Did the selected methodology apply to the project activity and was correctly applied with respect to the following: (a) project boundary; (b) baseline identification; (c) algorithms and/or formulae used to determine emission reductions; (d) additionality; (e) monitoring methodology.	PDD	DR	Yes.	OK	OK
7.2 Applicability of the selected baseline and monitoring methodology to the project activity					
7.2.1 Are reference number, version number, and title of the baseline and monitoring methodology clearly indicated?	PDD	DR	Yes. It is clearly indicated, ACM0002 (Version 13.0.0)	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
7.2.2 Is the applied version of the baseline and monitoring methodology previously approved by the CDM EB the most recent one and/or is this version still applicable?	PDD	DR	The version number of the applied methodology ACM0002 (Version 13.0.0) is the most recent until the date of calling for public comments on the website of UNFCCC.	OK	OK
7.2.3 Does the selected approved methodology apply to the project activity? - Are the applicability conditions of the methodology met? - Is the project activity expected to result in emissions other than those allowed by the methodology?	PDD	DR	Yes. This methodology applies to this project The project fulfils the applicability conditions defined in ACM0002 (Version 13.0.0) The project activity is not expected to result in emission other than those allowed by ACM0002 (Version 13.0.0).	OK	OK
7.2.4 Is the choice of methodology justified?	PDD	DR	Yes. The choice of the methodology is justified in the PDD.	OK	OK
7.2.5 Has PDD shown that the project activity meets each of the applicability conditions of any tool or other methodology component referred to the approved methodology?	PDD (B.2)	DR	The tools referenced in the methodology are: - Tool for the demonstration and assessment of additionality (Version 07.0.0) - Tool to calculate the emission factor for an electricity system (Version 03.0.0)	OK	OK
7.3 Deviation from an approved methodology					
7.3.1 Did project participants request a deviation before the publication of the PDD when applying an approved methodology to a proposed project activity?	PDD	DR	No. It is not necessary to request a deviation before the publication of the PDD.	OK	OK
7.3.2 Do CQC find at validation that project participants deviated from an approved methodology? If yes, does CQC consider that the deviation	PDD	DR	No.	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
was due to a project-specific issue implying that a revision of the methodology would not be required to address the issue or a revision of the methodology would be required to address the project situation?					
7.4 Clarification on the applicability of an approved methodology					OK
7.4.1 Is it necessary to request clarification of the methodology in accordance with the guidance provided by the CDM Executive Board? If so, is the request submitted with the intention of revising an approved methodology to expand its applicability?	PDD	DR	No.	OK	OK
7.5 Project boundary					
7.5.1 Is the delineation in the PDD of the project boundary is correct? Does it meet the requirements of the selected baseline methodology?	PDD	DR	Yes. The project boundary was clearly defined in the PDD which includes the project power plant and all power plants connected physically to NWCPG.	OK	OK
7.5.2 What sources and GHGs are listed in the boundary?	PDD	DR	Yes. As per the applied methodology, CO ₂ as GHG sources are listed in the boundary.	OK	OK
7.5.3 Have all sources and GHGs required by the methodology been included within the project boundary?	PDD	DR	Yes. All sources and GHGs required by ACM0002 (Version 13.0.0) have been included within the project boundary.	OK	OK
7.5.4 Are the sources and GHGs listed in B3 consistent with the description of section B6 and B7?	PDD	DR	Yes. The sources and GHGs listed in B3 are consistent with the description of section B6 and B7.	OK	OK
7.5.5 If the methodology allows project participants to choose whether a source or	PDD	DR	As for photovoltaic power project, only baseline CO ₂ emission is required to be included within the project	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
gas is to be included within the project boundary, has PP justified its choice?			boundary. There is no other option for PP to choose whether a source or gas is to be included.		
7.5.6 Are there any emission sources that will be affected by the project activity and are not addressed by the selected approved methodology? If so, do these emission sources contribute more than 1% of the overall expected average annual emissions reductions that requesting clarification of, revision to, or deviation from the methodology is necessary?	PDD	DR	No. There are no other emission sources be affected by the project activity and are not addressed by ACM0002 (Version 13.0.0).	OK	OK
7.6 Baseline scenario identification and description					
7.6.1 What is the baseline scenario? Has the baseline scenario been determined according to the methodology?	PDD	DR, I	The baseline scenario of the proposed project is equivalent electricity supplied by NWCPG (continuation of the current situation).	OK	OK
7.6.2 What other alternatives scenario have been considered and why is the selected scenario the most likely one?	PDD	DR	According to ACM0002 (Version 13.0.0) and relevant requirements of the Validation and Verification Standard (VVS), alternatives to the project activity do not need to be identified as the baseline scenario other than the one which has been prescribed by ACM0002 (Version 13.0.0).	OK	OK
7.6.3 Are the all scenarios that are considered by the project participants and are supplementary to those required by the methodology, are reasonable in the context of the proposed CDM project activity and that no reasonable alternative scenario has been excluded?	PDD	DR	See 7.6.2.	OK	OK
7.6.4 Are the documents and sources to	PDD	DR	See 7.6.2.	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
determine the baseline scenario referred to in the PDD correctly quoted and interpreted?					
7.6.5 Are “relevant national and/or sectoral policies and circumstances” considered during identifying the baseline scenario?	PDD	DR	Yes. The baseline scenario was determined in accordance with the information provided by the China's DNA, the relevant national policies and circumstances are described in the PDD.	OK	OK
7.7 Algorithms and/or formulae used to determine emission reductions					
7.7.1 Whether the steps taken and the equations and parameters applied in the PDD to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology including applicable tool(s)? (a) Do all assumptions and data used by the project participants are listed in the PDD, including their references and sources? (b) Do all documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;? (c) Do all values used in the PDD are considered reasonable in the context of the proposed project activity? (d) Have the baseline methodology and corresponding tool(s) been applied correctly to	PDD	DR	Yes. However, the annual emission reductions during the first 7-year crediting period are not correctly calculated in section B.6.4 of PDD version 01.	~~CAR-2~~	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
calculate project emissions, baseline emissions, leakage and emission reductions? (e) Do all estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD?					
7.8 Additionality of a project activity					
7.8.1 Has the project met all the additionality requirements of the selected methodology, tools and guidelines?	PDD	DR, I	Yes.	OK	OK
For small-scale CDM project activity					
7.8.2 Is the specific requirement on demonstration of additionality for small-scale project activity applied? If so, are the Non-binding practice examples to demonstrate additionality for SSC project activities followed?	PDD	DR, I	N/A	N/A	N/A
7.8.3 Is any applicable additionality tool applied?	PDD	DR, I	N/A	N/A	N/A
For micro-scale project activity					
7.8.4 Is it a micro-scale project activity? In case of bundled project, does the total size of the bundled project exceed the limits for micro-scale project activity?	PDD	DR, I	N/A	N/A	N/A
7.8.5 Does the micro-scale project activity (every individual project activity for bundled micro-scale project activity) satisfy the conditions of automatic additionality? If so,	PDD	DR, I	N/A	N/A	N/A



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
checklists of 7.10~7.13 are not applicable.					
7.9 Assessment of prior consideration of the clean development mechanism					
7.9.1 Are the project's starting date and operational life time clearly defined and evidenced?	PDD	DR, I	Yes. The project starting date was determined as 08/05/2012, the date when the PV Module purchase contract was signed. The project's operational lifetime described in section C.1 of the PDD is 25 years which is in line with FSR.	OK	OK
7.9.2 Is the starting date of the project activity before or after/on 02/08/2008?	PDD	DR	The starting date of the project activity is after 02/08/2008.	OK	OK
7.9.3 Is the starting date of the project activity prior to the date of publication of the PDD for stakeholder comments? If so, is it demonstrated that the CDM benefits were considered necessary in the decision to undertake the project as a proposed CDM project activity?	PDD	DR, I	The date of publication of the PDD on UNFCCC website for stakeholder comments is on 20/04/2013, which is later than the project starting date 08/05/2012. According to the board meeting of CDM application on 11/04/2012, the CDM revenue was seriously considered.	OK	OK
7.9.4 Is the starting date of the project activity reported in the PDD in accordance with the "Glossary of CDM terms"?	PDD	DR, I	Yes. The project starting date was determined as 08/05/2012, the date when the PV Module purchase contract was signed. It is determined correctly in accordance with the definition of the project starting date as defined in the Glossary of CDM Terms (Version 06)	OK	OK
For project activity with a start date on or after 02/08/2008					
7.9.5 Is the starting date of the project activity	PDD	DR,	As per the PCP, the PP informed the Host Party DNA and	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
prior to the date of publication of the PDD for stakeholder comments? If so, did PP inform the Host Party DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status?		I	UNFCCC secretariat on 18/10/2012 (got confirmed on 25/10/2012) and 18/10/2012 respectively. The validation team has checked the notification letters and the website of china DNA and UNFCCC, it is confirmed that the PPs has informed host country DNA and EB within 6 months after the project starting date. The validation team deems the proposed project is appropriate in terms of the prior consideration of the CDM and in line with the PCP.		
For project activity with a start date before 02/08/2008					
7.9.6 Is evidence that PP had an awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project provided?	PDD	DR	N/A	N/A	N/A
7.9.7 Were real and continuing actions taken to secure CDM status for the project in parallel with its implementation?	PDD	DR	N/A	N/A	N/A
7.10 Identification of alternatives					
7.10.1 Does the PDD identify credible alternatives to the project activity in order to determine the most realistic baseline scenario?	PDD	DR	Yes. See section 7.6.2.	OK	OK
7.10.2 Does the approved methodology selected by the proposed CDM project activity prescribe the baseline scenario and no further analysis is required?	PDD	DR	According to ACM0002 , the baseline scenario is the electricity delivered to the grid by project activity would have otherwise been generated by the Operation of grid-connected power plant and by the addition of new	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
			generation sources connected to the NWCPG.		
7.10.3 Is the list of alternatives complete? - Does the list of alternatives include as one of the options that the project activity is undertaken without being registered as a proposed CDM project activity; - Do the alternatives comply with all applicable and enforced legislation? - In case the PDD argues that specific laws are not enforced in the country or region, is evidence available concerning that statement? (step 1b)	PDD	DR	See 7.6.2.	OK	OK
7.11 Investment analysis					
7.11.1 - Whether the project would produce no financial or economic benefits other than CDM-related income? - Whether the project activity is less economically or financially attractive than at least one other credible and realistic alternative? - Whether the financial returns of the proposed project activity would be insufficient to justify the required investment?	PDD	DR, I	The project has income for electricity selling. The project IRR is below the benchmark without CDM revenue.	OK	OK
7.11.2 Is investment analysis used to demonstrate the additionality of the	PDD	DR, I	Yes	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
proposed CDM project activity?					
7.11.3 Whether the latest version of the “Guidelines on the assessment of investment analysis” as provided by the Board and with other relevant provision is applied?	PDD	DR	Yes	OK	OK
7.11.4 Which option does the PDD select to conduct the investment analysis?	PDD	DR, I	a benchmark analysis (Option III)	OK	OK
7.11.5 Is the most suitable financial indicator clearly identified (IRR, NPV, Cost benefit ratio, or (levelized) unit cost)?	PDD	DR, I	It's reasonable to identify IRR as the financial indicator	OK	OK
7.11.6 Are all relevant assumptions and parameters used in investment analysis listed?	PDD	DR, I	Yes	OK	OK
7.11.7 Is a thorough assessment of all parameters and assumptions used in calculating the relevant financial indicator, and determine the accuracy and suitability of these parameters using the available evidence and expertise in relevant accounting practices conducted?	PDD	DR	Yes.	OK	OK
7.11.8 Are investment analysis presented in a transparent manner, in the form or in a separate appendix, with all data used (variables, parameters, data sources, etc.)?	PDD	DR, I	Yes	OK	OK
7.11.9 Are the financial calculations carried out	PDD	DR,	Yes, the validation team has recalculated the IRR and confirms that the calculation was carried out accurately.	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
for any investment analysis accurate? Take as IRR and NPV calculation as an example: - Is the cash inflow complete? - Is the cash outflow complete? - Are the data sources of cash flow acceptable? - Is the depreciation calculation corrective? - Is the income tax calculation corrective? - Is the IRR or NPV sheet consistent with profit and loss table? - Is the IRR calculation correct?		I			
7.11.10 For the benchmark applied in the investment analysis: - Is the type of benchmark applied suitable for the type of financial indicator presented? - Do the risk premiums applied in determining the benchmark reflect the risks associated with the project type or activity? - Is it reasonable to assume that no investment would be made at a rate of return lower than the benchmark?	PDD	DR, I	Yes. According to the authoritative reference <i>Provisional Regulation for Economic Assessment on Power Engineering Technical Rehabilitation Projects</i>, which is deemed an appropriate benchmark reference for power generation projects investment in China and also widely applied in most of CDM registered photovoltaic power projects in China. The project IRR is below the benchmark, which shows that the project is not financially attractive compared with the benchmark (8%) in absence of CDM benefits.	OK	OK
7.11.11 Are feasibility report, public announcements and annual financial reports related to the proposed CDM project activity and the project	PDD	DR	Yes.	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
participants reviewed?					
7.11.12 Is FSR the basis of the decision to proceed with the investment in the project?	PDD FSR	DR, I	Yes. The period of time between the finalization of the FSR and the investment decision is sufficiently short, and that it is unlikely in the context of the underlying project activity that the input values would have materially changed. Therefore, FSR has been the basis of the decision to proceed with the investment in the project.	OK	OK
7.11.13 Are the values used in the PDD and associated annexes fully consistent with the FSR? If not, have the appropriateness of the inconsistent value been assessed?	PDD, FSR	DR, I	Yes. See section 3.8 III of the project	OK	OK
7.11.14 Have the input values from the FSR been valid and applicable at the time of the investment decision?	PDD	DR	Idem.	OK	OK
7.11.15 Are the parameters cross-checked against third-party or publicly available sources, such as invoices or price indices?	PDD, FSR	DR, I	Idem.	OK	OK
7.11.16 Does the analysis comply with the "Guidance on the assessment of investment analysis" and "guidelines for the reporting and validation of PLF"?	PDD	DR	Idem.	OK	OK
7.11.17 Is the correctness of computations carried out and documented by project participants assessed?	PDD	DR, I	Idem.	OK	OK
7.11.18 Is the sensitivity analysis reasonable? Is the sensitivity analysis by the project	PDD	DR,	Yes..	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
participants to determine under what conditions variations in the result would occur and the likelihood of these conditions assessed?		I			
7.12 Barrier analysis					
7.12.1 Does the barrier identified by PPs has direct impact on the financial returns of the project activity?	PDD	DR	It is not selected by the PP.	OK	OK
7.12.2 Is the proposed project activity to be implemented in Least Developed Countries?	PDD	DR	Idem.	OK	OK
7.12.3 Are the barriers identified by the PP real?	PDD	DR	Idem.	OK	OK
7.12.4 Do the barriers prevent the implementation of the project activity but not the implementation of at least one of the possible alternatives?	PDD	DR	Idem.	OK	OK
7.12.5 Does PP has demonstrated in an objective way how the CDM alleviates each of the identified barriers to a level that the project is not prevented anymore from occurring by any of the barriers? Have PP provided transparent and documented evidence, and offer conservative interpretation of this documented evidence?	PDD	DR	Idem.	OK	OK
7.13 Common practice analysis					
7.13.1 Is the proposed project type first-of-its kind?	PDD	DR, I,	No. The proposed project is not the first-of-its kind.	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
7.13.2 Is the geographical scope (e.g. the defined region) of the common practice analysis appropriate for the assessment of common practice related to the project activity's technology or industry type?	PDD	DR, I	Yes, it is defined as Gansu Province. The analysis is appropriate.	OK	OK
Is the proposed project subject to the 4 measures defined in the latest version of "Guidelines for the establishment of sector specific standardized baselines", i.e. (a) Fuel and feedstock switch; (b) Switch of technology with or without change of energy source (including energy efficiency improvement); (c) Methane destruction; (d) Methane formation avoidance.	PDD	DR, I	Yes. It subjects to (b)	OK	OK
7.13.3 If so, Has the applicable output range ($\pm 50\%$) been calculated correctly? Have all the plants that deliver the same output or capacity within the applicable output range (N_{all}) been identified correctly? Have the plants that apply technologies different to the technology applied in the proposed project activity (N_{diff}) been identified correctly?	PDD	DR, I	Yes. The applicable output range is from 25W to 75W, which is calculated correctly. N_{all} and N_{diff} are identified correctly.	OK	OK
7.13.4 If not, Are there any similar and operational projects (e.g., using similar technology or	PDD	DR, I	N/A	N/A	N/A



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
practice), other than CDM project activities, been undertaken in the defined region? If so, have all the similar and operational projects been identified? What are essential distinctions between the proposed CDM project activity and the other similar activities?					
7.13.5 Is the proposed CDM project activity common practice?	PDD	DR, I	The project is not a common practise.	OK	OK
7.14. Monitoring plan					
7.14.1 For Data and parameters to be monitored					
7.14.1.1 Are the data or parameters presented in section B.7.1 complete in the context of the proposed project activity according to the applied methodology including applicable tool (s)?	PDD	DR, I,	Yes	OK	OK
7.14.1.2 Have the following items for each parameter properly been described? • Title; • Description; • Source of data; • Value(s) applied; • Measurement methods and procedures; • Monitoring frequency; • QA/QC procedures;	PDD	DR, I	Yes.	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
- Purpose of data; - Additional comment.					
7.14.1.3 If data and parameters monitored in section B.7.1 are to be determined by a sampling approach, is a description of the sampling plan provided in accordance with the recommended outline for a sampling plan in the "Standard for sampling and surveys for CDM project activities and programme of activities"?	PDD	DR, I	No.	OK	OK
7.14.2 For implementation of the monitoring plan					
7.14.2.1 Is the measuring equipment described (including Unambiguous location) and deemed appropriate?	PDD	DR, I	Yes. During the interview, CQC validation team was acquainted that the project owner is responsible for the management, monitoring and reporting of the proposed project, and will establish a CDM project management office and assign dedicated people responsible and reporting of the generation and emission reductions of the project activity. The main meter M1 and its backup meter M2 (Bi-directional, accuracy: 0.5s or more accurate) will be installed at the substation and project site respectively, to measure the net electricity exported to and imported from the grid. This data will be measured continuously and recorded monthly; the recorded data can be crosschecked against the transaction records (balance bill or invoice). The meter will be calibrated and tested annually by a qualified institute accepted by local grid company and PP. This was verified by CQC during the on-site assessment.	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
			The project's monitoring plan has been described in PDD. 1Operation and management structure of monitoring 2Monitoring equipment and installation 3Data collection and management 4Quality assurance and quality control 5 Monitoring results and verification Detailed procedures have been elaborated in the PDD. These will be maintained and implemented to enable subsequent verification of emission reductions. The validation team confirms that the project participant has the ability to implement the monitoring plan. And the monitoring plan is in line with the requirement of the methodology ACM0002 (Version 13.0.0).		
7.14.2.2 Is the calibration frequency for the measuring equipment properly addressed? Which one is followed in the determination of the calibration frequency and is it deemed appropriate? • Applied methodology; • EB's guidance; • Local/national standards or the manufacturer's specifications; • International standards.	PDD	DR, I	Item	OK	OK
7.14.2.3 Is the measurement accuracy addressed and deemed appropriate? Are procedures in place on how to deal with erroneous measurements?	PDD	DR, I	Item	OK	OK
7.14.2.4 Is the operational and management structure put in place to implement the	PDD	DR, I	Yes, the operational and management structure is clearly described in the MP.	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
monitoring plan?					
7.14.2.5 Is the definition of responsibilities and institutional arrangements for data collection and archiving included and deemed appropriate?	PDD	DR, I	Yes	OK	OK
7.14.2.6 Are provisions included to ensure that data monitored and required for verification and issuance be kept and archived electronically for two years after the end of the crediting period or the last issuance of CERS, whichever occurs later?	PDD	DR, I	Yes.	OK	OK
7.14.2.7 Are the data management and quality assurance and quality control procedures sufficient to ensure that the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex post and verified?	PDD	DR, I	Yes	OK	OK
7.14.2.8 Are the monitoring arrangements described in the monitoring plan are feasible with the project design?	PDD	DR, I	Yes	OK	OK
8. Environmental impacts					
8.1 Has an analysis of the environmental impacts of the project activity been sufficiently described?	PDD	DR	Yes. The impacts have been described in Section D of PDD.	OK	OK
8.2 Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	PDD	DR, I	Yes. EIA is required in China. The EIA was approved on	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
			06/06/2012.		
8.3 Will the project create any adverse environmental effects?	PDD	DR	Yes.	OK	OK
8.4 Are transboundary environmental impacts considered in the analysis?	PDD	DR	No transboundary impacts are expected.	OK	OK
8.5 Have identified environmental impacts been addressed in the project design?	PDD	DR, I	Yes. The environmental impacts have been identified and described in the PDD.	OK	OK
8.6 Does the project comply with environmental legislation in the host country?	PDD	DR, I	Yes. EIA of the project was approved on 06/06/2012, which confirmed that the project comply with environmental legislation in China and in Gansu Province.	OK	OK
9. Local stakeholder consultation					
9.1 Have the local stakeholders been invited by the PP to comment on the proposed CDM project activity prior to the publication of the PDD on the UNFCCC website?	PDD	DR, I,	Yes. The stakeholder consultation process was conducted by questionnaire. The invited stakeholders include: • local Development and Reform committee, • local EPA • local residents	OK	OK
9.2 Have the PP invite comments from local stakeholders in an open and transparent manner?	PDD	DR, I	Yes.	OK	OK
9.3 Are all the comments received for the proposed CDM project activity by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity invited?	PDD	DR, I	Yes.	OK	OK



Validation checklists	Ref	Mov	Validation findings	Draft. Concl.	Final Concl.
9.4 Is the summary of the comments received as provided in the PDD complete?	PDD	DR, I	Yes. A summary of stakeholder comments received is described in section E.2 of PDD.	OK	OK
9.5 Has PP taken due account of any comments received and described this process in the PDD?	PDD	DR, I	No negative comments received.	OK	OK

Table 2 Resolution of Corrective Action and Clarification Requests

Clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project owner response	Validation team conclusion
CAR 1. The Modalities of Communication statement (MOC) and its annex 1 were not provided at the time of onsite visit	4.1	The MoC and its annex 1 have been provided to DOE with the response.	OK. The validation team received the MoC Statement and it's Annex from Gansu Heihe Hydropower New Energy Development Co., Ltd. which has contractual relationship with CQC, it is confirmed that the MoC statement and its Annex comply with all relevant forms and requirements. The validation team also checked the written confirmation provided by Gansu Heihe Hydropower New Energy Development Co., Ltd. It is confirmed that Mr. DU Yong from Gansu Heihe Hydropower New Energy Development Co., Ltd has the authority to do so. The MoC statement and the written confirmation were provided to CQC through the official mailbox of Gansu Heihe Hydropower New Energy Development Co., Ltd. CQC validation team confirms the corporate identity of project participant and focal points included in the Modalities of Communication (MoC) statement, as well as the personal identities, including specimen signatures and employment status, of their authorized signatories are valid and accurate.
CAR 2. The annual emission reductions during the first 7-year crediting period are not correctly calculated in section B.6.4 of PDD version 01.	7.7.1	There was a calculation mistake in the PDD version 01, 1 year was missing from the 7-year crediting period. The mistake has been corrected in the PDD version 02.	OK. The validation team has checked the PDD version 02 and confirms the calculation is correct.
CL 1. The actual installed	6.3	The actual installed capacity of the project is 50.225MWp,	OK.



Clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project owner response	Validation team conclusion
capacity of the project was not clearly stated in section A.1 and A.3 of PDD version 01		and the information has been added in the PDD version 02.	As per the PV Module purchase contract and onsite investigation, the actual installation of the project is 50.225MWp, which is different from the FSR. The validation team has checked the installed facilities onsite and confirms that the slight difference will not impact the additionality of the project.



APPENDIX B: Certificates of Competence



CERTIFICATE OF COMPETENCE

Qualification in accordance with CQC's procedure for Qualifications and Training Management (CDMP01):

Name: Wang Keli
CDM validator: Yes
CDM verifier: Yes
Technical expert: /
Technical area: TA1.2: Energy generation from renewable energy sources
TA13.1: Waste handling and disposal
TA13.2/TA15.2: Animal waste management

Approved by:
(Quality manager)

Date: 2011-07-11



CERTIFICATE OF COMPETENCE

Qualification in accordance with CQC's procedure for Qualifications and Training Management (CDMP01):

Name: Ni Xi
CDM validator: Yes
CDM verifier: Yes
Technical expert: /
Technical area: TA13.1: Waste handling and disposal
TA1.2: Energy generation from renewable energy sources

Approved by:
(Quality manager)

Date: 2011-11-10



CERTIFICATE OF COMPETENCE

Qualification in accordance with CQC's procedure for Qualifications and Training Management (CDMP01):

Name: Hong Dajian
CDM validator: Yes
CDM verifier: Yes
Technical expert: /
Technical area: TA1.2: Energy generation from renewable energy sources

Approved by:
(Quality manager)

Date: 2011-07-11



CERTIFICATE OF COMPETENCE

Qualification in accordance with CQC's procedure for Qualifications and Training Management (CDMP01):

Name: Chen Yixing
CDM validator: Yes
CDM verifier: Yes
Technical expert: /
Technical area: TA1.2: Energy generation from renewable energy sources
TA11.2: GHG capture and destruction

Approved by:
(Quality manager)

Date: 2011-07-11



APPENDIX C: Documents Reference.

Document
/1/. Project Design Document (PDD) for the “Gansu Ganzhou District Nantan Phase I 50MWp Solar Photovoltaic Power Project” Version 01, 16/04/2013.
/2/. Project Design Document (PDD) for the “Gansu Ganzhou District Nantan Phase I 50MWp Solar Photovoltaic Power Project” Version 02, 21/05/2013.
/3/. Feasibility Study Report (FSR) of “Gansu Ganzhou District Nantan Phase I 50MWp Solar Photovoltaic Power Project” completed in 03/2012.
/4/. Approval Letter of FSR by Gansu Development and Reform Commission on 22/08/2012.
/5/. Environmental Impact Assessment (EIA) of the project was completed in 05/2012
/6/. Approval Letter of EIA by Environment Protection Bureau of Gansu on 06/06/2012.
/7/. The evidence of the CDM stakeholder consultation for the project.
/8/. Directorate decision on CDM project development determined on 11/04/2012
/9/. LoA issued by China's DNA in 26/03/2013
/10/. MoC Statement and it's Annex
/11/. The written confirmation of the MOC statement
/12/. Notification letter to the NDRC and EB
/13/. <i>Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects</i> issued by Operation Department of Power Generation and Transmission
/14/. The National Development and Reform Commission issued the “ <i>Notice on the on-grid tariff management policy for solar PV power generation from NDRC of China</i> ”, Fagaijiage [2011] No.1594, on 24/07/2011. http://www.sdpc.gov.cn/zcfb/zcfbtz/2011tz/t20110801_426501.htm
/15/. Guidelines for the Reporting and Validation of Plant Load Factors (EB48, Annex 11)
/16/. ACM0002 (Version 13.0.0) Consolidated baseline methodology for grid-connected electricity generation from renewable sources.
/17/. Tool for the demonstration and assessment of additionality (Version 07.0.0),
/18/. Tool to calculate the emission factor for an electricity system (Version 03.0.0)
/19/. Guidelines for completing the project design document (version 01.0) (EB 66, Annex 8)
/20/. State Council: Provisional Regulations on Urban Maintenance and Construction Tax, valid since 1985. http://202.108.90.146/guoshui/action/GetArticleView1.do?id=1409&flag=1 State Council: Decision on the revision of the “Provisional Regulations of Levying Education Surtax” issued by the Stated Council on 20/08/2005 and valid since 01/10/2005. http://www.law-lib.com/law/law_view1.asp?id=99771 Ministry of Finance of China: The notification on Levying Local Education Surtax on 07/11/2010 and valid since then. http://wenku.baidu.com/view/6ee30ddd5022aaea998f0f51.html



/21/. Kyoto Protocol (1997)
/22/. Decision 17/CP.7 (Marrakesh – Accords)
/23/. Validation and Verification Standard (Version 03.0)
/24/. CDM project standard (version 02.0)
/25/. CDM project cycle procedure (version 03.1)
/26/. Guidelines on common practice (version 02.0)
/27/. China Electric Power Yearbooks 2009– 2011.
/28/. China Energy Statistical Yearbooks 2009– 2011.
/29/. CDM EB, Answer to DNV's request for deviation of Chinese project activities from AM0005, received on 1 December 2005. To be found on http://cdm.unfccc.int/Projects/Deviations
/30/. 2012 Baseline Emission Factors for Regional Power Grids in China issued by China's DNA on Oct. 15 th 2012. http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File2975.pdf China's Regional Grid Baseline Emission Factor Calculation (OM): Annex 1 of 2012 Baseline Emission Factors for Regional Power Grids in China. China's Regional Grid Baseline Emission Factor Calculation (BM) Annex 2 of 2012 Baseline Emission Factors for Regional Power Grids in China.
/31/. Guoshuihan [2005] No. 883 issued by State Administration of Taxation http://www.whgs.gov.cn/cms/whgs03/laws/05/030205/2005-09-14.html
/32/. The Accounting Standards for Business Enterprises (No.4), and Fixed Assets with (Caikuai [2006] No.3) issued by the Ministry of Finance.
/33/. Economic Assessment Method and Parameters for Construction Project (Third Edition)
/34/. The Enforcement Regulation for Enterprise Income Tax Law of the People's Republic of China issued by the State Council on 06/12/2007 http://www.gov.cn/zwgk/2007-12/11/content_830645.htm
/35/. The educational surtax interim measures of Gansu Province, Xinzhengfa 1996(12)"issued on 15/02/1996 by People's government of Gansu Province
/36/. The statistical data of the fixed investment price in Gansu published by the National Bureau of Statistics on 2012 http://www.xjso.gov.cn/main/showdetails.aspx?id=393
/37/. Relevant regulations about Chinese welfare system: 1. Management Law of Housing Accumulation Fund issued by State Department on 24/03/2002. 2. Upgrading Basic Old-age Pensions for Workers of Enterprises issued by State Department on 03/12/2005. 3. Establishment of Basic Medical Insurance System for Employees issued by State Department on 14/12/1998. 4. Notification of industrial injury insurance rate issued on 19/10/2003. 5. Unemployment Insurance Byelaw issued by State Government on 22/01/1999. 6. Labor Union Law of P.R.C.



7. Enterprise Income Tax Law of the People's Republic of China issued on 16/03/2007 and effective on 01/01/2008.
8. Notification for Complement Endowment and Medical Fees jointly issued by Financial Department and State Administration Taxation on 02/09/2009.
9. Decision to Promote the Further Education issued by State Government on 28/10/2005
/38/.Glossary of CDM terms (Version 06)
/39/.The benchmark bank interest rate published by People's Bank of China http://www.pbc.gov.cn/publish/zhengcehuobisi/631/2012/20120706181352694274852/20120706181352694274852_.html
/40/.Guidance on the Assessment of Investment Analysis (Version 05.0)
/41/.No. 538 of State Council: Provisional Regulations of People's Republic of China on Value Added Tax (revised version)" issued on 10/11/2008 and valid since 01/01/2009 http://www.gov.cn/flfg/2008-12/18/content_1181744.htm
/42/. The PV Module purchase contract of the project, signed on 08/05/2012
/43/. The EPC contract of the project ,signed on 20/05/2012; The power transmission project contracts, signed in 09/2012; The construction contract of the auxiliary system, signed in 10/2012;
/44/.The evidence of the price increase in Gansu province. http://www.chinaacc.com/new/184_900_201301/09su1543486868.shtml
Websites used
http://cdm.unfccc.int (United Nations Framework Convention on Climate Change)
http://www.ndrc.gov.cn/ (National Development and Reform Commission)
http://www.zhb.gov.cn/ (Ministry of Environmental Protection of the People's Republic of China)
http://cdm.ccchina.gov.cn/web/index.asp (Deparment of Climate change, National Development and Reform Commission)
http://www.ipcc.ch/ (The Intergovernmental Panel on Climate Change)