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Validation Report

CARBON ASSET MANAGEMENT SWEDEN AB

VALIDATION OF THE CDM-PROJECT: HUANGHE TONGLI WHR PROJECT

REPORT NO. 1017076

2008, June 090

TÜV SÜD Industrie Service GmbH

Carbon Management Service
Westendstr. 199 - 80686 Munich – GERMANY

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Report No.	Date of first issue	Revision No.	Date of this revision	Certificate No.
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Subject: Validation of a CDM Project

Accredited TÜV SÜD Unit:	**TÜV SÜD Contract Partner:**
TÜV SÜD Industrie Service GmbH Certification Body "climate and energy" Westendstr. 199 - 80686 Munich Federal Republic of Germany	TÜV SÜD Industrie Service GmbH Carbon Management Service Westendstr. 199 - 80686 Munich Federal Republic of Germany
Client: Carbon Asset Management Sweden AB Drottninggatan 92-94, 111 36 Stockholm, Sweden	**Project Site(s):** Luoyang City, Yiyang County Henan Province P.R. of China

Project Title: Huanghe Tongli WHR Project

Applied Methodology / Version: ACM0004 vers. 02	**Scope(s):** 1

First PDD Version:		**Final PDD version:**	
Date of issuance:	2007-03-02	Date of issuance:	2008-06-04
Version No.:	01	Version No.:	03
Starting Date of GSP	2007-06-20		

Estimated Annual Emission Reduction: 54 547 tons CO_{2e}

Assessment Team Leader:	**Further Assessment Team Members:**
Dr. Sven Kolmetz	Mr. Jimmy Zhou Ms. Xuemei Li Mr. Luciano Grugni Mr. Ling Liu

Summary of the Validation Opinion:

☒ The review of the project design documentation and the subsequent follow-up interviews have provided TÜV SÜD with sufficient evidence to determine the fulfilment of all stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM. Hence TÜV SÜD will recommend the project for registration by the CDM Executive Board in case letters of approval of all Parties involved will be available before the expiring date of the applied methodology(ies) or the applied methodology version respectively.

☐ The review of the project design documentation and the subsequent follow-up interviews have not provided TÜV SÜD with sufficient evidence to determine the fulfilment of all stated criteria. Hence TÜV SÜD will not recommend the project for registration by the CDM Executive Board and will inform the project participants and the CDM Executive Board on this decision.

Abbreviations

ACM	Approved Consolidated Methodology
AM	Approved Methodology
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CR	Clarification Request
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission reduction
GHG	Greenhouse gas(es)
KP	Kyoto Protocol
MP	Monitoring Plan
NGO	Non Governmental Organisation
PDD	Project Design Document
PP	Project Participant
TÜV SÜD	TÜV SÜD Industrie Service GmbH
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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1 INTRODUCTION

1.1 Objective

The validation objective is an independent assessment by a Third Party (Designated Operational Entity = DOE) of a proposed project activity against all defined criteria set for the registration under the Clean Development Mechanism (CDM). Validation is part of the CDM project cycle and will finally result in a conclusion by the executing DOE whether a project activity is valid and should be submitted for registration to the CDM-EB. The ultimate decision on the registration of a proposed project activity rests at the CDM Executive Board and the Parties involved.

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

Huanghe Tongli WHR Project.

1.2 Scope

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

- Ø The Kyoto Protocol, in particular § 12
- Ø Decision 2/CMP1 and Decision 3/CMP.1 (Marrakech Accords)
- Ø Further COP/MOP decisions with reference to the CDM (e.g. decisions 4 – 8/CMP.1)
- Ø Decisions by the EB published under http://cdm.unfccc.int
- Ø Specific guidance by the EB published under http://cdm.unfccc.int
- Ø Guidelines for Completing the Project Design Document (CDM-PDD), and the Proposed New Baseline and Monitoring Methodlogy (CDM-NM)
- Ø The applied approved methodology
- Ø The technical environment of the project (technical scope)
- Ø Internal and national standards on monitoring and QA/QC
- Ø Technical guideline and information on best practice

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

Once TÜV SÜD receives a first PDD version, it is made publicly available on the internet at TÜV SÜD's webpage as well as on the UNFCCC CDM-webpages for starting a 30 day global stakeholder consultation process (GSP). In case of any request a PDD might be revised (under certain conditions the GSP will be repeated) and the final PDD will form the basis for the final evaluation as presented by this report. Information on the first and on the final PDD version is presented at page 1.

The only purpose of a validation is its use during the registration process as part of the CDM project cycle. Hence, TÜV SÜD can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

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2 METHODOLOGY

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

In order to ensure transparency, a validation protocol was customised for the project. TÜV SÜD developed a "cook-book" for methodology-specific checklists and protocol based on the templates presented by the Validation and Verification Manual. The protocol shows, in a transparent manner, criteria (requirements), the discussion of each criterion by the assessment team and the results from validating the identified criteria. The validation protocol serves the following purposes:

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

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

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

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

Validation Protocol Table 2: Resolution of Corrective Action and Clarification Requests

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

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

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

2.1 Appointment of the Assessment Team

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

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

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

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

Name	Qualification	Coverage of technical scope	Coverage of sectoral expertise	Host country experience
Dr. Sven Kolmetz	**ATL**	þ	þ	þ
Mr. Jimmy Zhou	A	þ	þ	þ
Ms Xuemei Li	T	þ	þ	þ
Mr Luciano Grugni	A	þ	þ	
Mr Ling Liu	T	þ	þ	þ

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

Mr. Jimmy Zhou is an environmental engineer and an auditor for environmental management systems (according to ISO 14001) at Jiangsu TUV Product Service Ltd. He is based in Guangzhou. In his position he is responsible for the implementation of validation, verification and certifications audits for management systems. He has received training in the CDM validation process and participated already in several CDM project assessments. Before entering TUV SUD Guangzhou Branch he worked as Quality Engineer in industrial companies.

Mr. Luciano Grugni is an auditor for environmental management systems at the department "Climate, Energy and Environment" of the Italian branch of TÜV SÜD Group. He has been involved in the topic of environmental auditing, monitoring and verification due to the requirements of the Kyoto Protocol. His main focus lies on emissions trading audits and renewable energies.

Ms. Xuemei Li is a GHG auditor-trainee for environmental management systems at Jiangsu TUV Product Service Ltd. She is based in Guangzhou. She has received training in the CDM validation process and participated already in several CDM project assessments Before entering TUV SUD Guangzhou Branch she worked for a consulting company where she was specialized on CDM.

Mr. Ling Liu is a business economist and a GHG auditor-trainee for environmental management systems at Jiangsu TUV Product Service Ltd. He is based in Guangzhou. He has received training in the CDM validation process and participated already in several CDM project assessments Before entering TUV SUD Guangzhou Branch he worked as a technical/environmental engineer at a hydropower plant company.

2.2 Review of Documents

The first PDD version submitted by the client and additional background documents related to the project design and baseline were reviewed as initial step of the validation process. A complete list of all documents and proofs reviewed is attached as annex 2 to this report.

2.3 Follow-up Interviews

On April 26th, 2007 TÜV SÜD performed interviews on-site with project stakeholders to confirm selected information and to resolve issues identified in the first document review. The table below provides a list of all persons interviewed in the context of this on-site visit.

Name	Organisation
Mr. Baoqiang Liu	General manager, Luoyang Huanghe Tongli Coment Co. Ltd
Mr. Xinguo Ma	Vice general manager , Luoyang Huanghe Tongli Coment Co. Ltd
Mr. Wenwei Yao	General Accountant, Luoyang Huanghe Tongli Coment Co. Ltd
Mr. Zhanjing Wang	Manager, Luoyang Huanghe Tongli Coment Co. Ltd
Mr. Shanguo Gong	Director, Luoyang Huanghe Tongli Coment Co. Ltd
Ms. Ranqiu Ma	Vice general manager, Shanghai Chuanji Investment Management Co. Ltd.
Ms. Zhiwei Ma	Project manager, Shanghai Chuanji Investment Management Co. Ltd.

2.4 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation is to resolve the requests for corrective actions and clarifications and any other outstanding issues which needed to be clarified for TÜV SÜD`s positive conclusion on the project design. The Corrective Action Requests and Clarification Requests raised by TÜV SÜD were resolved during communication between the client and TÜV SÜD. To guarantee the transparency of the validation process, the concerns raised and responses that have been given are summarised in chapter 3 below and documented in more detail in the validation protocol in annex 1.

2.5 Internal Quality Control

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

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

3 SUMMARY OF FINDINGS

As informed above all findings are summarized in table 2 of the attached validation protocol.

History of the validation process

The audit team has been provided with a first PDD version in March 2007. Based on this documentation a document review and a fact finding mission in form of an on-site audit has taken place. Afterwards the client decided to revise the PDD according to the CARs and CRs indicated in the audit process. The final PDD version submitted in January 2008 serves as the basis for the assessment presented herewith. Changes are not considered to be significant with respect to the qualification of the project as a CDM project based on the two main objectives of the CDM to achieve a reduction of anthropogenic GHG emissions by sources and to contribute to sustainable development.

Project description

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

Henan Luoyang Huanghe Tongli Cement Co., Ltd. has one clinker production line with capacity of 5,000 t/d located in Yiyang County, Luoyang City, Henan Province. At present, the electricity consumed in the cement production of the project was imported from Central China Power Grid. To effectively utilize the low temperature waste heat of the exit gases from Suspension Preheater (SP) and Air Quenching Chamber (AQC), the project intends to build one 9 MW captive power station for the 5,000t/d clinker production line. The project activity includes the installation of 2 WHR boilers (one WHR boiler for SP exit gas and one WHR boiler for AQC exit gas), one steam turbine and one generator.

Findings

In total the assessment team expressed 4 Clarification Requests and 19 Corrective Action Requests. Besides some minor corrections and formal issues there were no crucial findings. Since all the open questions have been closed the PDD could be considered in compliance with the CDM requirements.

Baseline calculation

For the BM calculation the PDD adopts modified methods agreed by the EB for the approved methodology ACM0002 because plant specific data are not available in China. The emission factor of the thermal power plants is calculated by the proportion of the emissions of coal, gas and oil times the emission factor of the best available coal, gas and oil power plant as defined and published by the Chinese DNA. The new thermal capacity installation that exceeds 20% in the last years, for which data are available, is finally assessed with this factor. The emission reductions are calculated based on the IPCC2006 values and the Chinese yearbooks 2003 – 2006 as published by the Chinese DNA on August 7th 2007 under consideration of some minor corrections. These corrections have been checked and verified.

Additionality

The additionality has been evidenced by investment analysis. The IRR calculation will be uploaded together with the PDD. All the figures have been checked and they are consistent with the feasibility report that has been approved by the NDRC besides some minor inconsistencies that do not influence the final result of the investment analysis. The calculation has been reviewed and is considered to be correct. The sectoral benchmark from the “Project Economic Evaluation Method and Parameters”, dated 2006 has been used and verified by the audit team.

The sensitivity analysis has been verified and the assumptions are reasonable. Even if there are changes of up to 10% the IRR is still below the benchmark.

The consideration of CDM has been confirmed by the agreement of CDM development which was signed by Luoyang Huanghe Tongli Cement Co., ltd and Shanghai Chuanji Investment Management Co., Ltd. on 08/09/2006 which is before the starting date of the proposed project.

The common practice has been reviewed by checking the officially available sources. The Tongli projects, all of them applying for CDM, are the first of its kind in this province

Hence, the project complies with the requirements and is additional.

Further issues have been raised:

Issue 1

The DOE shall confirm how it has validated that the input values of the IRR meet the requirements of EB 38 paragraph 54 (c).

AND

Issue 2

Further clarification is required how the DOE has validated the start date of the project activity.

AND

Issue 3

Further clarification is required on how the DOE has validated the baseline determination, in particular that the continuation of grid electricity imports is a more economically attractive alternative than the project activity undertaken without CDM.

Referring to Issue 1

Response by Project Participant

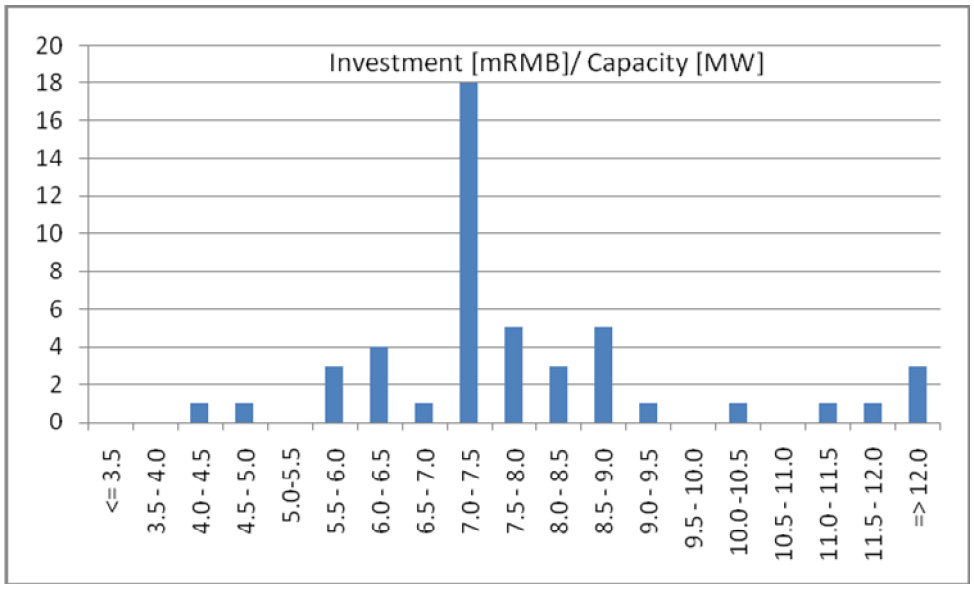
All the input values of IRR are from the Feasibility Study Repot (FSR), which has been approved by authorities. The FSR was finalized in October 2006, when the incentive of CDM was considered to proceed with the project. This meets the requirement of EB 38 paragraph 54 (c).

Response by TÜV SÜD

The input values have been carefully checked and are all based on a third party assessment (The Feasibility Study Report issued by Luoyang heavy industry mine machinery engineering design institute).

To provide additional certainty that the figures used for the IRR calculation are applicable we are comparing the main parameters with other CDM projects of the same type, in the same industry. For the Tongli Huanghe WHR project the specific investment per MW is 6.69 Mio. RMB / MW and the specific operational costs per year are 1.08 Mio. RMB / MW. The average specific investment per MW in China (based on the evaluation of 56 waste recovery projects in the Cement Sector in China that applied or are applying for CDM) is 7.93 Mio. RMB / MW (see figure below); the average specific operational costs are 0,99 Mio. RMB / MW. For the operational hours the average is 6451 h whereas Huanghe is calculated with 6216 h, the tariff for purchase power from grid is 0.326 RMB / kWh compared to 0.354RMB / kWh as the Chinese average. Hence, it can be confirmed that the Huanghe project does not apply unreasonable assumptions.

The DOE has checked and verified the price for purchase of electricity from grid through invoices. The actual price is actually slightly lower, than the price assumed in the IRR calculation. Hence the calculation can be considered as appropriate and conservative.



Specific Investment of Waste Heat Recovery Projects in China (Source: UNFCCC/TÜV SÜD)

Referring to issue 2

Response by Project Participant

In the PDD the start date of project is 1 Oct 2007, when the project entity planned to start civil construction. In the Report of Work Commencement of Huanghe WHR project, the actual construction starting date is 28 September 2007. The Equipment Purchase and Transportation Agreement was signed in Sep, 2007. The FSR was finished in October 2006. According to the EB guidance "The starting date of a CDM project activity is the earliest of the three: implementation, construction or real action of a project activity begins. In the revised PDD, the project start date has been updated to 1 September 2007, which is the Equipment Purchase and Transportation Agreement signing date. Evidence of serious CDM consideration was dated prior to this project start date.

Response by TÜV SÜD

The starting date of a CDM project activity is the date on which the implementation or

construction or real action of a project activity begins.

The Equipment Purchase and Transportation Agreement were issued in September 2007.

This can be considered as the first action, when the project was not "reversible" anymore and constructions started on 28th September 2008. Earlier 1st October 2007 was stated to be the project stating date in the PDD. The PDD has been corrected adapting 1st September 2007 as the starting date.

The CDM consideration can be evidenced with the CDM agreement between Huanghe Tongli Cement and Shanghai Chuanji, dated 08/09/2006. This is significantly before the projects stating date.

Referring to issue 3

Response by Project Participant

In the Section B.4 of the PDD, it has been discussed that alternatives 3, 4 and 5 face the barriers of laws and regulations, resources insufficiency, technology and finance. Thus these alternatives are excluded when identifying the baseline scenario. Alternative 1 and 2 are the only two possible baseline scenarios that cannot be eliminated due to prohibitive barriers. These two scenarios thus have to be compared with an economic comparison in order to determine the appropriate baseline scenario. In accordance with the investment comparison analysis (Option II), alternative 1 (the project activity) is considered financially less attractive than alternative 2(Equivalent electricity import from the grid) if the NPV is negative. As can be seen from the submitted excel file, the NPV is minus 6.77 million Yuan. Thus, in line with the methodology, it can be concluded by this economic analysis that scenario 2 is the most plausible baseline scenario. The baseline scenario has been identified as alternative 2 "continuation of equivalent import of electricity from Central China Power Grid".

Response by TÜV SÜD

In the Section B.4 within the PDD, alternatives 3, 4 and 5 face the barriers of laws and regulations, resources insufficiency, technology and finance. They have been discussed already.

The alternatives 1 and 2 comply with all legal and regulatory requirements. As the baseline scenario of alternative 2, there is no specific comparable method for choosing the most financially attractive alternative.

According to “Tool for the demonstration and assessment of additionality /Version 03”, benchmark analysis was used for the investment analysis of this project. As far as alternatives 1, the equity IRR without CDM revenues is 8.11% only, which is lower than the benchmark value (12%). It is concluded the project is not attractive from a financial point of view. It has been discussed in details in Section B.5 within the PDD. On the contrary, alternative 2 is the continued situation of the present state. It needs no additional investment and faces no prohibitive barrier and is also most economically attractive, so it is considered as the baseline scenario.

To further prove the unprofitability of the project an investment comparison analysis in accordance with Option II of the additionality tool was conducted. Alternative 1 (the project activity) is considered financially less attractive than alternative 2 (Equivalent electricity import from the grid) if the NPV is negative. As can be seen from the submitted excel file, the NPV is minus 113.31. The NPV for the electricity import is minus 106. Thus, in line with the methodology, it can be concluded by this economic analysis that scenario 2 is the most plausible baseline scenario.

The baseline scenario has been identified as alternative 2 “continuation of equivalent import of electricity from Central China Power Grid”.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

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

The following table presents all key information on this process:

webpage: http://www.netinform.de/KE/Wegweiser/Guide2_1.aspx?ID=3221&Ebene1_ID=26&Ebene2_ID=974&mode=1	
Starting date of the global stakeholder consultation process: 2007-06-20	
Comment submitted by: -	**Issues raised:** -
Response by TÜV SÜD: -	

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5 VALIDATION OPINION

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

Huanghe Tongli WHR Project.

The review of the project design documentation and the subsequent follow-up interviews have provided TÜV SÜD with sufficient evidence to determine the fulfilment of stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM. Hence TÜV SÜD will recommend the project for registration by the CDM Executive Board.

An analysis as provided by the applied methodology demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions as specified within the final PDD version.

The validation is based on the information made available to us and the engagement conditions detailed in this report. The validation has been performed using a risk based approach as described above. The only purpose of this report is its use during the registration process as part of the CDM project cycle. Hence, TÜV SÜD can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

Munich, 2008-06-10

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

Munich, 2008-06-10

Assessment Team Leader

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Annex 1: Validation Protocol

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
A. GENERAL DESCRIPTION OF PROJECT ACTIVITY				
A.1. Title of the project activity				
A.1.1. Does the used project title clearly enable to identify the unique CDM activity?	1, 2,	The used project title identifies the CDM activity by the name of the company and the location as well as the project activity	þ	þ
A.1.2. Are there any indication concerning the revision number and the date of the revision?	1, 2	The available PDD indicated as version HH-01 dated 02/03/07.	þ	þ
A.1.3. Is this consistent with the time line of the project's history?	1, 2	The same version has been published for GSP since June 20th, 2007 at the DOE's website: www.netinform.net.	þ	þ
A.2. Description of the project activity				
A.2.1. Is the description delivering a transparent overview of the project activities?	1, 2, 6	The project is to effectively utilize the low temperature waste heat of the exit gases from Suspension Preheater (SP) and Air Quenching Chamber (AQC), the project entity intends to build one 9 MW captive power station for the 5,000t/d clinker production line. The project activity includes installation of 2 WHR boilers (one WHR boiler for SP exit gas and one WHR boiler for AQC exit gas), one steam turbine and one generator. The total power capacity of steam turbine generator is 9 MW. **Corrective Action Request No.1.** Please complete the time schedule. Please add the time of FSR and Commissioning.	**CAR 1**	þ
A.2.2. What proofs are available demonstrating that the project description is in compliance with the actual situation or planning?	1, 2, 6, 7, 8, 9	The project activity is the displacement of purchasing electricity by coal fired power plants with electricity generated by utilizing the waste heat from the rotating kiln of cement production. The following data deliver evidences for the project activity:	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		- Feasibility study (approved on Dec. 15th, 2006 by Luoyang City Development and Reform Commission) - Environmental Impact Report Table (approved on March 9th, 2007 by Luoyang Environment Protection Bureau). These data have been evidenced during the audit. The required data are delivered in the PDD. The statistical background has been reviewed with official documentation (Approved feasibility Study Report, China Electric Power Yearbooks 2003-2006).		
A.2.3. Is the information provided by these proofs consistent with the information provided by the PDD?	1, 6, 7, 8, 9	The required data and background are delivered in the PDD and have been evidenced during the audit.	þ	þ
A.2.4. Is all information presented consistent with details provided by further chapters of the PDD?	1, 6, 7, 8, 9	Yes, all the information presented consistent with details provided by further chapters of the PDD.	þ	þ
A.3. Project participants				
A.3.1. Is the form required for the indication of project participants correctly applied?	1	The required form is applied correctly.	þ	þ
A.3.2. Is the participation of the listed entities or Parties confirmed by each one of them?	1	Both Luoyang Huanghe Tongli cement Co., Ltd and Carbon Asset Management Sweden AB are listed in A.3. Table.	þ	þ
A.3.3. Is all information on participants / Parties provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	1	Yes, it is.	þ	þ
A.4. Technical description of the project activity				
A.4.1.*Location of the project activity*				

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
A.4.1.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	1	The project location could be clearly identified in the PDD. The project activity is located at Yiyang County, Luoyang City, Henan Province, China.. The geographical coordinates are given. **Corrective Action Request No.2.** The geographical coordinates should be specified including geographical seconds. The claimed coordinates used with Google Earth result in a point in the middle of the road at the top of a hill.	**CAR 2**	þ
A.4.1.2. How is it ensured and/or demonstrated, that the project proponents can implement the project at this site (ownership, licenses, contracts etc.)?	1, 7, 9	The feasibility report and EIA were approved by NDRC and EPB of Henan Province on Dec. 15th, 2006 and on March 9th, 2007 respectively.	þ	þ
A.4.2.*Category(ies) of project activity*				
A.4.2.1. To which category(ies) does the project activity belonging to? Is the category correctly identified and indicated?	1, 2	The project activity falls into scope 1, which has been clearly identified in the PDD.	þ	þ
A.4.3.*Technology to be employed by the project activity*				
A.4.3.1. Does the technical design of the project activity reflect current good practices?	1, 6, 8	Yes. The technology design of the project activity reflects current good practice, though the working efficiency of key apparatus and operation systems of the domestic equipment are still much lower than the imported ones. For this project, the owner chooses CITIC Heavy Machinery inc. as supplier of the Steam-additional condensing turbine and Generator.	þ	þ
A.4.3.2. Does the description of the technology to be applied provide sufficient and transparent input/ information to	1, 2, 6, 7, 8, 9	Yes, the project activity comprises the recovering and utilization of waste heat to generate electricity for the substitution of grid supplied electricity mainly from coal fired plants. There is no doubt that this	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
evaluate its impact on the greenhouse gas balance?		technology will reduce the GHG emissions significantly.		
A.4.3.3. Does the implementation of the project activity require any technology transfer from annex-I-countries to the host country(ies)?	1, 6, 8	The whole operation system together with key facilities are designed and manufactured by CITIC Heavy Machinery inc. and Hangzhou Boiler Group Co., Ltd, Obviously, a technology transfer isn't required.	þ	þ
A.4.3.4. Is the technology implemented by the project activity environmentally safe?	1, 6, 8	The project activity is electricity generation by utilizing the waste heat from the rotating kiln of the cement production. Through the recovery process of waste heat, the harmful emissions (including SO_x, NO_x and floating particles) could be significantly reduced.	þ	þ
A.4.3.5. Is the information provided in compliance with actual situation or planning?	1, 6	The main equipments and operation procedure are listed in Table A 4-1 of the PDD. **Clarification Request No. 1.** The purchase agreement of the main equipments is not available. Please provide it to the validator.	**CR1**	þ
A.4.3.6. Does the project use state of the art technology and / or does the technology result in a significantly better performance than any commonly used technologies in the host country?	1, 6, 13, 14	Yes. The project adopts domestic advanced technology and equipments. It will improve the working efficiency prominently.	þ	þ
A.4.3.7. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1, 6, 8, 13, 14	We do not expect that there will be a substitution because the turbines and the other equipment have been newly commissioned and installed. The life cycle of boilers and turbine are under normal circumstances longer than the project period.	þ	þ
A.4.3.8. Does the project require extensive	1, 6, 13,	Yes, because of the use of domestic advanced technology and instruments, there are additional training needs to guarantee safe op-	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
initial training and maintenance efforts in order to be carried out as scheduled during the project period?	14	eration during the life time of the project.		
A.4.3.9. Is information available on the demand and requirements for training and maintenance?	1, 14	The operators have been planed to be trained to acquire experience at Jilin Liaoyuan Jingang Cement. The training plan has been re-viewed by the DOE on site.	þ	þ
A.4.3.10. Is a schedule available for the implementation of the project and are there any risks for delays?	1, 6	Please see A.2.1	See A.2.1	þ
A.4.4.*Estimated amount of emission reductions over the chosen crediting period*				
A.4.4.1. Is the form required for the indication of projected emission reductions correctly applied?	1, 2, 3	The project emission reductions are shown in chapter A.4.4 Table according to the guidelines.	þ	þ
A.4.4.2. Are the figures provided consistent with other data presented in the PDD?	1, 2, 3	**Corrective Action Request No.3.** The crediting period will start after registration of this project, so the starting and end date should be revised.	**CAR 3**	þ
A.4.5.*Public funding of the project activity*				
A.4.5.1. Is the information provided on public funding provided in compliance with the actual situation or planning as available by the project participants?	1, 6	According to the investment records reviewed by the DOE there is no public funding, all costs are covered by private capital and bank loan.	þ	þ
A.4.5.2. Is all information provided consistent with the details given in remaining chapters of the PDD (in particular annex 2)?	1, 6	The statements are consistent with PDD.	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
B. APPLICATION OF A BASELINE AND MONITORING METHODOLOGY				
B.1. Title and reference of the approved baseline and monitoring methodology				
B.1.1.1. Are reference number, version number, and title of the baseline and monitoring methodology clearly indicated?	1, 2	The ACM0004 methodology (version 02) is applied to this project. It is clearly indicated at B.1 of the PDD.	þ	þ
B.1.1.2. Is the applied version the most recent one and / or is this version still applicable?	1, 2	The 2nd version of ACM0004 is the latest one.	þ	þ
B.2. Justification of the choice of the methodology and why it is applicable to the project activity				
B.2.1. Is the applied methodology considered the most appropriate one?	1, 2	Besides ACM0004, AM0024 “Baseline methodology for greenhouse gas reductions through waste heat recovery and utilisation for power generation at cement plants” seems also to be applicable. However, the project activity fulfils the applicability criteria of ACM0004; hence, the project developer chose this methodology. As this methodology is the latest one and refers to the latest revision of ACM0002 the DOE agrees with the project developer that this will be the more appropriate methodology.	þ	þ
B.2.2. Criterion 1: The applicability is limited to project activities that generates electricity from waste heat, waste pressure or the combustion of waste gases in industrial facilities	1, 2	<table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> Through recovering and utilizing the waste heat from the rotating kiln of cement clinker production line, the project generates electricity to replace the power imported from Central China Power Grid, a grid	þ	þ

<table>
<tr><th colspan="2">CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td colspan="2"></td><td></td><td>that delivers electricity mainly generated with fossil fuels.</td><td></td><td></td></tr>
<tr><td>B.2.3.</td><td>Criterion 2:
The project activity has to displace electricity generation with fossil fuel in the electricity grid or captive electricity generation from fossil fuels</td><td>1, 2</td><td><table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table>Through recovering and utilizing the waste heat from the rotating kiln of cement clinker production line, the project generates electricity to replace the power imported from Central China Power Grid, a grid that delivers electricity mainly generated with fossil fuels.</td><td>þ</td><td>þ</td></tr>
<tr><td>B.2.4.</td><td>Criterion 3:
After the implementation of the project activity there has to be done no fuel switch in the process, where the waste heat or pressure or the waste gas is produced.</td><td>1, 2</td><td><table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table>The technology and equipment ensures that there’s no fuel switch in the process.</td><td>þ</td><td>þ</td></tr>
<tr><td>B.2.5.</td><td>Criterion 4:
If capacity expansion of an existing facility is planned during the crediting period, the added capacity must be treated as a new facility.</td><td>1, 2</td><td><table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>N.A.</td></tr><tr><td>Compliance provable?</td><td>N.A.</td></tr><tr><td>Compliance verified?</td><td>N.A.</td></tr></table>The project activity is an installation of a new power plant. Hence, this section is not applicable.</td><td>þ</td><td>þ</td></tr>
<tr><td colspan="6">B.3. Description of the sources and gases included in the project boundary</td></tr>
<tr><td colspan="6">Integrate the required amount of sub-checklists for sources and gases as given by the methodology applied and comment on at least every line</td></tr>
</table>

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td colspan="5">answered with “No”</td></tr>
<tr><td>B.3.1. Source:
Grid electricity generation
Gas(es): CO2
Type: Baseline Emissions</td><td>1, 2</td><td><table><tr><th>Boundary checklist</th><th>Yes / No</th></tr><tr><td>Source and gas(es) discussed in the PDD?</td><td>Yes</td></tr><tr><td>Inclusion / exclusion justified?</td><td>Yes</td></tr><tr><td>Explanation / Justification sufficient?</td><td>Yes</td></tr><tr><td>Consistency with monitoring plan?</td><td>Yes</td></tr></table></td><td>þ</td><td>þ</td></tr>
<tr><td>B.3.2. Source:
Captive electricity generation
Gas(es): CO2
Type: Baseline Emissions</td><td>1, 2</td><td><table><tr><th>Boundary checklist</th><th>Yes / No</th></tr><tr><td>Source and gas(es) discussed in the PDD?</td><td>N.A.</td></tr><tr><td>Inclusion / exclusion justified?</td><td>N.A.</td></tr><tr><td>Explanation / Justification sufficient?</td><td>N.A.</td></tr><tr><td>Consistency with monitoring plan?</td><td>N.A.</td></tr></table>The project activity is a new facility, hence, this parameter needs not be considered.</td><td>þ</td><td>þ</td></tr>
<tr><td>B.3.3. Source:
On-site fossil fuel consumption due to the project activity
Gas(es): CO2
Type: Project Emissions</td><td>1, 2</td><td><table><tr><th>Boundary checklist</th><th>Yes / No</th></tr><tr><td>Source and gas(es) discussed in the PDD?</td><td>Yes</td></tr><tr><td>Inclusion / exclusion justified?</td><td>Yes</td></tr><tr><td>Explanation / Justification sufficient?</td><td>Yes</td></tr><tr><td>Consistency with monitoring plan?</td><td>Yes</td></tr></table></td><td>þ</td><td>þ</td></tr>
<tr><td>B.3.4. Do the spatial and technological boundaries as verified on-site comply with the discussion provided by / indication included to the PDD?</td><td>1, 2</td><td>The project boundary includes:
- the rotating kiln generating the waste heat;
- heat recovery boilers (SP and AQC boilers), waste heat generator unit and auxiliary facilities;
- all power plants connected to the defined electricity grid</td><td>CR 2</td><td>þ</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		Some related documents and evidence have been reviewed on site. **Clarification Request No. 2.** The grid connection contract should be provided to the validator.		
B.4. Description of how the baseline scenario is identified and description of the identified baseline scenario				
B.4.1. Have all technically feasible baseline scenario alternatives (a) - (f) to the project activity been identified and discussed by the PDD? Why can this list be considered as being complete?	1, 2, 3	The following baseline scenarios are discussed: - The proposed project activity not undertaken as a CDM project activity - Continuation of equivalent import of electricity from Central China Power Grid. - New fossil fuel based on captive power plant - New hydro power station with installed capacity of 9MW - Other uses of waste heat These scenarios are required by methodology, it can be found that "Continuation of equivalent import of electricity from Central China Power Grid" is the most likely baseline scenario. **Corrective Action Request No.4.** "Baseline scenario 1" should be described in accordance with the methodology ACM0004. "WHR for power generation project" should be deleted in the revised PDD.	**CAR 4**	þ
B.4.2. Does the project identify correctly and excludes those options not in line with regulatory or legal requirements?	1, 2, 3	During the site visiting, coal proved to be the only available source at project site. However, according to Chinese national regulations, installation of coal-fired power plants of less than 50 MW is not permitted. Therefore, the related scenarios are not the baseline scenario alternatives.	þ	þ
B.4.3. Have applicable regulatory or legal	1, 6,	There are no specific national regulations or legal requirements on	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
requirements been identified?	8	treating with the waste heat from clinker production.		
B.4.4. If baseline scenario is captive power generation (Option 1), is the estimated boiler efficiency determined due to Option A or B?	1	There's no existing captive power plant, hence, this section is not applicable.	þ	þ
B.4.5. If the baseline scenario is grid power imports (Option 2), is the Emission Factor calculated as in ACM0002?	1, 3, 6	It is demonstrated and evidenced that the grid-power-import is the baseline scenario for the project activity. The calculation processes are expounded in B.6.1 and Annex 3 of the PDD. However, some faults are detected: **Corrective Action Request No.5.** The calculation of the grid factor is wrong and the calculation in the Word version and the PDF version is different. Please correct and clarify. Please deliver the evidence that CDM has been considered before construction.	**CAR 5**	þ
B.4.6. If the baseline scenario includes both captive and imported power (Option 3), is the emission factor weighted correctly?	1	There's no existing captive power plant, hence, this section is not applicable.	þ	þ
B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity (assessment and demonstration of additionality):				
B.5.1. In case of applying step 2 / investment analysis of the additionality tool: Is the analysis method identified appropriately (step 2a)?	1, 6	Yes, the analysis method is identified appropriately. Additionality tool (version 3) provides 3 options. All of them are fully discussed in the PDD. Because the project activity generates financial benefits through the sales of electricity; the Option I is not applicable. The Option II is applicable to project whose alternatives	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		are similar investment project. The alternative baseline scenario of the project is continuation of equivalent import of electricity from Central Power Grid rather than new investment projects. Therefore option II is not an appropriate method. So, option III is an appropriate method.		
B.5.2. In case of Option I (simple cost analysis): Is it demonstrated that the activity produces no economic benefits other than CDM income?	1	Referring to B.5.1 of protocol, this section is not applicable.	þ	þ
B.5.3. In case of Option II (investment comparison analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?	1, 6	Referring to B.5.1 of protocol, this section is not applicable.	þ	þ
B.5.4. In case of Option III (benchmark analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?	1, 6	Yes, the most suitable financial indicators are clearly identified.	þ	þ
B.5.5. In case of Option II or Option III: Is the calculation of financial figures for this indicator correctly done for all alternatives and the project activity?	1, 6	The calculation of financial figures for IRR is done for the project activity without and with the revenues from the sales of CERs. **Clarification Request No. 3.** An excel sheet that allows the recalculation (including the formula) should be delivered to the validator. The Estimated annual output (60,800MWh) in Table B 5-1 should be consistent with the data 55,940MWh of page 2 and the data 60.800MWh in B.7.1.	**CR 3**	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
B.5.6. In case of Option II or Option III: Is the analysis presented in a transparent manner including publicly available proofs for the utilized data?	1, 6, 15	Yes. The proof of the financial benchmark rate of return (after tax) of the Chinese Cement industry accounting for 12% has been verified by the auditor.	þ	þ
B.5.7. In case of applying step 3 (barrier analysis) of the additionality tool: Is a complete list of barriers developed that prevent the different alternatives to occur?	1, 6	The project owner encounters both technology and investment barriers which are demonstrated in the PDD.	þ	þ
B.5.8. In case of applying step 3 (barrier analysis): Is transparent and documented evidence provided on the existence and significance of these barriers?	1, 6	**Clarification Request No. 4.** The quoted evidence regarding the barriers has to be delivered as PDF or hard copy to the validator.	**CR 4**	þ
B.5.9. In case of applying step 3 (barrier analysis): Is it transparently shown that the execution of at least one of the alternatives is not prevented by the identified barriers?	1, 2, 6	Yes, among the 5 alternatives identified in section 4, at least the alternative 2 (Continuation of import of equivalent electricity from Central China Power Grid) would not be prevented by the above mentioned barriers.	þ	þ
B.5.10. Have other activities in the host country / region similar to the project activity been identified and are these activities appropriately analyzed by the PDD (step 4a)?	1, 2	There is no similar plant in Henan province.	þ	þ
B.5.11. If similar activities are occurring: Is it demonstrated that in spite of these	1, 2	Yes, as facing barriers and lacking financial attraction, the project would not be implemented without the CDM component.	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
similarities the project activity would not be implemented without the CDM component (step 4b)?				
B.5.12. Is it appropriately explained how the approval of the project activity will help to overcome the economic and financial hurdles or other identified barriers ?	1, 2	N.A	þ	þ
B.6. Emissions reductions				
B.6.1.*Explanation of methodological choices*				
B.6.1.1. Is it explained how the procedures provided in the methodology are applied by the proposed project activity?	1, 2	The following steps are described in a transparent manner: --Calculation of the baseline emission due to the displacement of electricity -- Calculation of the project emission --Calculation of leakage emission --Calculation of emission reduction.	þ	þ
B.6.1.2. Is every selection of options offered by the methodology correctly justified and is this justification in line with the situation verified on-site?	1, 2, 6	Yes, the justification has been fully discussed and demonstrated in the PDD.	þ	þ
B.6.1.3. Are the formulae required for the determination of project emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1, 2, 3	Yes, the formula quoted from methodology is used. According to the feasibility study report, there's no fossil fuel used for generation start-up, in emergencies or providing additional heat, hence, the project emission is zero. Construction Phase	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		The Project Activity gives rise to leakage emissions from the initial manufacture of the equipment and construction. It is assumed that the emissions caused by this activity are far less than that for other sources of generation included in the baseline. Therefore no formulae for estimating leakage due to construction are required here. Operations Phase There is a little electricity used for start up from the grid, but the Project is not displacing grid electricity and therefore the leakage from the inside the fence facility within the Henan Grid is considered negligible. Therefore leakage emissions are zero.		
B.6.1.4. Are the formulae required for the determination of baseline emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1, 2, 3	Yes, they are.	þ	þ
B.6.1.5. Are the formulae required for the determination of leakage emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1, 2	According to the methodology, the leakage needs not be considered.	þ	þ
B.6.1.6. Are the formulae required for the determination of emission reductions correctly presented?	1, 2, 3	Yes, they are.	þ	þ
B.6.2.*Data and parameters that are available at validation*				

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td>B.6.2.1. Is the list of parameters presented in chapter B.6.2 considered to be complete with regard to the requirements of the applied methodology?</td><td>1, 2</td><td><u>Corrective Action Request No.6.</u>
Please see B.4.5.
The parameter EG_{GEN} is copied for many times the other parameters should be provided.</td><td>CAR 6</td><td>þ</td></tr>
<tr><td>B.6.2.2. Parameter Title:
EF_i
Carbon emissions factor of fuel (estimation of project emissions)</td><td>1, 2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table></td><td>þ</td><td>þ</td></tr>
<tr><td>B.6.2.3. Parameter Title:
Hr
Average plant efficiency</td><td>1, 2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N.A.</td></tr><tr><td>Data unit correctly expressed?</td><td>N.A.</td></tr><tr><td>Appropriate description of parameter?</td><td>N.A.</td></tr><tr><td>Source clearly referenced?</td><td>N.A.</td></tr><tr><td>Correct value provided?</td><td>N.A.</td></tr><tr><td>Has this value been verified?</td><td>N.A.</td></tr><tr><td>Choice of data correctly justified?</td><td>N.A.</td></tr><tr><td>Measurement method correctly described?</td><td>N.A.</td></tr></table></td><td>þ</td><td>þ</td></tr>
<tr><td>B.6.2.4. Parameter Title:
EF_y</td><td>1, 2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr></table></td><td>þ</td><td>þ</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
CO2 emission factor of the grid		Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided? Yes Has this value been verified? Yes Choice of data correctly justified? Yes Measurement method correctly described? Yes		
B.6.2.5. Parameter Title: $EF_{OM,y}$ CO2 operating margin emission factor of the grid	1, 2	Data Checklist / Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided? Yes Has this value been verified? Yes Choice of data correctly justified? Yes Measurement method correctly described? Yes	þ	þ
B.6.2.6. Parameter Title: $EF_{BM,y}$ CO2 build margin emission factor of the grid	1, 2	Data Checklist / Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided? Yes Has this value been verified? Yes	þ	þ

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td></td><td><table><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table></td><td></td><td></td></tr>
<tr><td>B.6.2.7. Parameter Title:
$F_{i,j,y}$
Amount of each fossil fuel consumed by each power source / plant</td><td>1, 2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N.A.</td></tr><tr><td>Data unit correctly expressed?</td><td>N.A.</td></tr><tr><td>Appropriate description of parameter?</td><td>N.A.</td></tr><tr><td>Source clearly referenced?</td><td>N.A.</td></tr><tr><td>Correct value provided?</td><td>N.A.</td></tr><tr><td>Has this value been verified?</td><td>N.A.</td></tr><tr><td>Choice of data correctly justified?</td><td>N.A.</td></tr><tr><td>Measurement method correctly described?</td><td>N.A.</td></tr></table></td><td>þ</td><td>þ</td></tr>
<tr><td>B.6.2.8. Parameter Title:
$COEF_{i,k}$
CO2 emission factor of each fuel type and each power source / plant</td><td>1, 2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N.A.</td></tr><tr><td>Data unit correctly expressed?</td><td>N.A.</td></tr><tr><td>Appropriate description of parameter?</td><td>N.A.</td></tr><tr><td>Source clearly referenced?</td><td>N.A.</td></tr><tr><td>Correct value provided?</td><td>N.A.</td></tr><tr><td>Has this value been verified?</td><td>N.A.</td></tr><tr><td>Choice of data correctly justified?</td><td>N.A.</td></tr><tr><td>Measurement method correctly described?</td><td>N.A.</td></tr></table></td><td>þ</td><td>þ</td></tr>
<tr><td>B.6.2.9. Parameter Title:</td><td>1, 2</td><td></td><td>þ</td><td>þ</td></tr>
</table>

Industrie Service

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td>$GEN_{j,y}$
Electricity generation of each power source / plant</td><td></td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N.A.</td></tr><tr><td>Data unit correctly expressed?</td><td>N.A.</td></tr><tr><td>Appropriate description of parameter?</td><td>N.A.</td></tr><tr><td>Source clearly referenced?</td><td>N.A.</td></tr><tr><td>Correct value provided?</td><td>N.A.</td></tr><tr><td>Has this value been verified?</td><td>N.A.</td></tr><tr><td>Choice of data correctly justified?</td><td>N.A.</td></tr><tr><td>Measurement method correctly described?</td><td>N.A.</td></tr></table></td><td></td><td></td></tr>
<tr><td>B.6.2.10. Parameter Title:
$EF_{CO2,i}$
CO2 emission factor of fuel used for captive power generation</td><td>1, 2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N.A.</td></tr><tr><td>Data unit correctly expressed?</td><td>N.A.</td></tr><tr><td>Appropriate description of parameter?</td><td>N.A.</td></tr><tr><td>Source clearly referenced?</td><td>N.A.</td></tr><tr><td>Correct value provided?</td><td>N.A.</td></tr><tr><td>Has this value been verified?</td><td>N.A.</td></tr><tr><td>Choice of data correctly justified?</td><td>N.A.</td></tr><tr><td>Measurement method correctly described?</td><td>N.A.</td></tr></table>
The project activity does not displace a captive power generation, then, this section is not applicable.</td><td>þ</td><td>þ</td></tr>
<tr><td>B.6.2.11. Parameter Title:
$Eff_{captive}$
Energy efficiency of captive power</td><td>1, 2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N.A.</td></tr></table></td><td>þ</td><td>þ</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
plant (estimation of baseline emissions factor in case of captive power)		Data unit correctly expressed? N.A. Appropriate description of parameter? N.A. Source clearly referenced? N.A. Correct value provided? N.A. Has this value been verified? N.A. Choice of data correctly justified? N.A. Measurement method correctly described? N.A. The project activity does not displace a captive power generation; hence, this section is not applicable.		
B.6.3.*Ex-ante calculation of emission reductions*				
B.6.3.1. Is the projection based on the same procedures as used for future monitoring?	1, 2, 3	Yes, it is.	þ	þ
B.6.3.2. Are the GHG calculations documented in a complete and transparent manner?	1, 2, 3	Yes, they are.	þ	þ
B.6.3.3. Is the data provided in this section consistent with data as presented in other chapters of the PDD?	1, 2, 3	The data in this section are consistent with those in other chapters of the PDD. **Corrective Action Request No.7.** In B.6.3. Step 6.3-4 of the PDD: the emission reductions of the project activity are 52,833 tCO_2e different from the data in the B.6.4. It should be corrected.	**CAR 7**	þ
B.6.4.*Summary of the ex-ante estimation of emission reductions*				
B.6.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	1, 3	The project activity is going to replace the electricity supplied from the Central China Power Grid, a grid mainly consisting of coal-fired plants. There's no doubt that fewer GHG emission will be resulted	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		in.		
B.6.4.2. Is the form/table required for the indication of projected emission reductions correctly applied?	1, 3	Yes, the required form is applied.	þ	þ
B.6.4.3. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	1, 3	The crediting period will start after the registration. Because 15 years of lifetime is expected, fixed crediting period of 10 years is chosen and seems reasonable.	þ	þ
B.6.4.4. Is the data provided in this section in consistency with data as presented in other chapters of the PDD?	1, 3	**Corrective Action Request No.8.** The total expected emission reductions of the project activity in the 10 years crediting period should be 523,080 tCO_2e. The data 528.080 tCO_2e before the form in B.6.4 should be corrected.	**CAR 8**	þ
B.7. Application of the monitoring methodology and description of the monitoring plan				
B.7.1.*Data and parameters monitored*				
B.7.1.1. Is the list of parameters presented in chapter B.7.1 considered to be complete with regard to the requirements of the applied methodology?	1, 2	**Corrective Action Request No.9.** The parameters required according to the methodology to monitor the project emission should be completely included in the revised PDD and the justification of each parameter needs to be given in tables. If there are parameters not needed, please mark this in the adequate table as "not applicable".	**CAR 9**	þ
B.7.1.2. Parameter Title: Q_i Volume of the auxiliary fuel used by project activity (estimation of project emissions)	1, 2	Monitoring Checklist / Yes / No Title in line with methodology? N.A. Data unit correctly expressed? N.A. Appropriate description of parameter? N.A. Source clearly referenced? N.A. Correct value provided for estimation? N.A.	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		Has this value been verified? N.A. Measurement method correctly described? N.A. Correct reference to standards? N.A. Indication of accuracy provided? N.A. QA/QC procedures described? N.A. QA/QC procedures appropriate? N.A.		
B.7.1.3. Parameter Title: NCV_f Net Calorific Value of fuel (estimation of project emissions)	1, 2	Monitoring Checklist — Yes / No Title in line with methodology? N.A. Data unit correctly expressed? N.A. Appropriate description of parameter? N.A. Source clearly referenced? N.A. Correct value provided for estimation? N.A. Has this value been verified? N.A. Measurement method correctly described? N.A. Correct reference to standards? N.A. Indication of accuracy provided? N.A. QA/QC procedures described? N.A. QA/QC procedures appropriate? N.A.	þ	þ
B.7.1.4. Parameter Title: EG_{Gen} Total electricity generated (estimation of electricity generation by project activity)	1, 2	Monitoring Checklist — Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided for estimation? No Has this value been verified? Yes Measurement method correctly described? Yes Correct reference to standards? Yes	**CAR10**	þ

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td>Indication of accuracy provided?</td><td>Yes</td></tr>
<tr><td>QA/QC procedures described?</td><td>Yes</td></tr>
<tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr>
</table>

<u>Corrective Action Request No.10.</u>
- The value of data applied for the emission reduction calculation in section B. 5 of the PDD shall be presented in the table;
- The accuracy of the electricity meter, the calibration procedure, the calibration standard and the related process of monitoring, recording and archiving data shall be described in the revised PDD.
</td><td></td><td></td></tr>
<tr><td>B.7.1.5. Parameter Title:
EG_{AUX}
Auxiliary electricity
(including electrical energy utilized by the power generating equipment in the project boundary)</td><td>1, 2</td><td>
<table>
<tr><th>Monitoring Checklist</th><th>Yes / No</th></tr>
<tr><td>Title in line with methodology?</td><td>Yes</td></tr>
<tr><td>Data unit correctly expressed?</td><td>Yes</td></tr>
<tr><td>Appropriate description of parameter?</td><td>Yes</td></tr>
<tr><td>Source clearly referenced?</td><td>Yes</td></tr>
<tr><td>Correct value provided for estimation?</td><td>No</td></tr>
<tr><td>Has this value been verified?</td><td>Yes</td></tr>
<tr><td>Measurement method correctly described?</td><td>Yes</td></tr>
<tr><td>Correct reference to standards?</td><td>Yes</td></tr>
<tr><td>Indication of accuracy provided?</td><td>Yes</td></tr>
<tr><td>QA/QC procedures described?</td><td>Yes</td></tr>
<tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr>
</table>
See CAR10
</td><td>See B.7.1.4</td><td>þ</td></tr>
</table>

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td>B.7.1.6. Parameter Title:
EG_y
Net electricity supplied to facility</td><td>1, 2</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>N.A.</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>N.A.</td></tr><tr><td>QA/QC procedures appropriate?</td><td>N.A.</td></tr></table>See CAR10</td><td>See B.7.1.4</td><td>þ</td></tr>
<tr><td>B.7.1.7. Parameter Title:
Q_{WG}
Flow rate of waste gas</td><td>1, 2</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N.A.</td></tr><tr><td>Data unit correctly expressed?</td><td>N.A.</td></tr><tr><td>Appropriate description of parameter?</td><td>N.A.</td></tr><tr><td>Source clearly referenced?</td><td>N.A.</td></tr><tr><td>Correct value provided for estimation?</td><td>N.A.</td></tr><tr><td>Has this value been verified?</td><td>N.A.</td></tr><tr><td>Measurement method correctly described?</td><td>N.A.</td></tr><tr><td>Correct reference to standards?</td><td>N.A.</td></tr><tr><td>Indication of accuracy provided?</td><td>N.A.</td></tr><tr><td>QA/QC procedures described?</td><td>N.A.</td></tr><tr><td>QA/QC procedures appropriate?</td><td>N.A.</td></tr></table></td><td>þ</td><td>þ</td></tr>
<tr><td>B.7.1.8. Parameter Title:</td><td>1, 2</td><td></td><td>þ</td><td>þ</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
NCV_{WG} Net Calorific Value of the waste gas		Monitoring Checklist / Yes / No Title in line with methodology? N.A. Data unit correctly expressed? N.A. Appropriate description of parameter? N.A. Source clearly referenced? N.A. Correct value provided for estimation? N.A. Has this value been verified? N.A. Measurement method correctly described? N.A. Correct reference to standards? N.A. Indication of accuracy provided? N.A. QA/QC procedures described? N.A. QA/QC procedures appropriate? N.A.		
B.7.1.9. Parameter Title: Q_i Flow rate of fuel i	1, 2	Monitoring Checklist / Yes / No Title in line with methodology? N.A. Data unit correctly expressed? N.A. Appropriate description of parameter? N.A. Source clearly referenced? N.A. Correct value provided for estimation? N.A. Has this value been verified? N.A. Measurement method correctly described? N.A. Correct reference to standards? N.A. Indication of accuracy provided? N.A. QA/QC procedures described? N.A. QA/QC procedures appropriate? N.A.	þ	þ
B.7.1.10. Parameter Title: NCV_i Net calorific value of fuel i	1, 2	Monitoring Checklist / Yes / No Title in line with methodology? N.A. Data unit correctly expressed? N.A.	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		Appropriate description of parameter? N.A. Source clearly referenced? N.A. Correct value provided for estimation? N.A. Has this value been verified? N.A. Measurement method correctly described? N.A. Correct reference to standards? N.A. Indication of accuracy provided? N.A. QA/QC procedures described? N.A. QA/QC procedures appropriate? N.A.		
B.7.1.11. Parameter Title: Use the latest approved version of ACM0002 to calculate the grid emission factor. If the power generation capacity of the project plant is less or equal to 15 MW, project participants may use the average CO2 emission factor of the electricity system, as referred to in option (d) in step 1 of the baseline determination in ACM0002. $EF_{grid,y}$	1, 2, 3	The ex-ante approach from ACM 0002 (ver. 6) is adopted for the $EF_{grid,y}$ estimation. The spreadsheet has been reviewed by the auditor on site. Some faults have been detected; therefore, it has to be updated. Whereas, this parameter need not be monitored during the 1st crediting period.	see CAR5	þ
B.7.2. *Description of the monitoring plan*				
B.7.2.1. Is the operational and management structure clearly described and in compliance with the envisioned situation?	1, 2	The managing structure is clearly depicted in the PDD. All monitoring data will be recorded by appointed data collectors and verified by QC supervisors. In case the data exceed the tolerance, authorized quality director and general manager will be reported for the necessary adjustment.	þ	þ
B.7.2.2. Are responsibilities and institutional arrangements for data collection and	1, 2	See B.7.2.1. of the protocol.	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
archiving clearly provided?				
B.7.2.3. Does the monitoring plan provide current good monitoring practice?	1, 2	Yes, it is.	þ	þ
B.7.2.4. If applicable: Does annex 4 provide useful information enabling a better understanding of the envisioned monitoring provisions?	1, 2	The monitoring procedures are clearly described in section B.7, A monitoring sketch has been provided in the Annex 4. **Corrective Action Request No.11.** The third party calibration, frequency of calibration and accuracy should be mentioned. A principal diagram of the monitoring system has to be included (incl: back-up lines and all connections to the grid).	**CAR 11**	þ
B.8. Date of completion of the application of the baseline study and monitoring methodology an the name of the responsible person(s)/entity(ies)				
B.8.1.1. Is there any indication of a date when the baseline was determined?	1, 2	The baseline is determined on Dec. 30th, 2006.	þ	þ
B.8.1.2. Is this consistent with the time line of the PDD history?	1, 2	Yes. The PDD is prepared with the latest available data at that time (China Electric Power Yearbook 2001-2005, China Energy Statistical Yearbook 2003-2005 as well as IPCC 2006).	þ	þ
B.8.1.3. Is the information on the person(s) / entity(ies) responsible for the application of the baseline and monitoring methodology provided consistent with the actual situation?	1, 2	Yes. The persons from entity indicated in the PDD are also the ones being interviewed for baseline verification.	þ	þ
B.8.1.4. Is information provided whether this person / entity is also considered a project participant?	1, 2	No. They aren't the investment party of this project.	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
C. DURATION OF THE PROJECT ACTIVITY / CREDITING PERIOD				
C.1. Duration of the project activity				
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	1	The expected operational life time of the project activity exceeds 15 years.	þ	þ
C.2. Choice of the crediting period and related information				
C.2.1. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	1	More than 15 years of life time is expected, hence, the choice of fixed crediting period of 10 years makes sense.	þ	þ
D. ENVIRONMENTAL IMPACTS				
D.1. Documentation on the analysis of the environmental impacts, including transboundary impacts				
D.1.1. Has the analysis of the environmental impacts of the project activity been sufficiently described?	1, 8, 9	Yes, the environmental impacts of the project activity such as air pollution, thermal pollution, acoustical pollution and water pollution have been clearly described.	þ	þ
D.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been approved?	1, 8, 9	Yes, EIA is a must in P. R. China for new power projects. And it was approved by Luoyang Environmental Protection Bureau. Those documents have been reviewed by the DOE.	þ	þ
D.1.3. Will the project create any adverse environmental effects?	1, 8, 9	Referring to the EIA and the approval of EIA, the project will create no negative environmental impacts.	þ	þ
D.1.4. Were transboundary environmental	1, 8,	The proposed project activity locates within China. Hence, this sec-	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
impacts identified in the analysis?	9	tion is not applicable.		
D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party				
D.2.1. Have the identified environmental impacts been addressed in the project design sufficiently?	1, 8, 9	Referring to the EIA and the approval of the EIA, the project activity will reduce GHG emissions . It will have no negative impact on the ambient air quality, reduce effects of thermal pollution, have no obvious impact on the water environment, and will minimize noise pollutions.	þ	þ
D.2.2. Does the project comply with environmental legislation in the host country?	1, 8, 9	Yes.	þ	þ
E. STAKEHOLDERS' COMMENTS				
E.1. Brief description how comments by local stakeholders have been invited and compiled				
E.1.1. Have relevant stakeholders been consulted?	1, 10, 11, 12	Yes, the relevant stakeholders have been consulted via an open public meeting dated on December 2006 and March 2007. **Corrective Action Request No.12.** How were the stakeholders identified? How many people are effected (residents)? Please deliver the pictures of the meetings to the validator. There is no information about the meeting in March 2007 in the PDD.	**CAR 12**	þ
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	1, 10, 11, 12	**Corrective Action Request No.13.** What kind of media was used to inform them (evidence)?	**CAR 13**	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
E.1.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	1, 10, 11, 12	There are no regulations/laws in China for carrying out the stake-holder consultation process for this project activity.	þ	þ
E.1.4. Is the undertaken stakeholder process that was carried out described in a complete and transparent manner?	1, 10, 11, 12	The participants' list and the minute of the meeting in December 2006 have been verified on site.	See E.1.1	þ
E.2. Summary of the comments received				
E.2.1. Is a summary of the received stakeholder comments provided?	1, 10, 11, 12	The summary of the comments from stakeholder are collected and records have been reviewed by the auditor.	þ	þ
E.3. Report on how due account was taken of any comments received				
E.3.1. Has due account been taken of any stakeholder comments received?	1, 10, 11, 12	Referring to the PDD and the evidence provided on site, all the received comments are positive.	þ	þ
F. ANNEXES 1 – 4				
F.1. Annex 1: Contact Information				
F.1.1. Is the information provided consistent with the one given under section A.3?	1	Yes, it is.	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
F.1.2. Is the information on all private participants and directly involved Parties presented?	1	Yes, it is.	þ	þ
F.2. Annex 2: Information regarding public funding				
F.2.1. Is the information provided on the inclusion of public funding (if any) in consistency with the actual situation presented by the project participants?	1	Pls. refer to A.4.5.1. of protocol.	þ	þ
F.2.2. If necessary: Is an affirmation available that any such funding from Annex-I-countries does not result in a diversion of ODA?	1	Not applicable.	þ	þ
F.3. Annex 3: Baseline information				
F.3.1. If additional background information on baseline data is provided: Is this information consistent with data presented by other sections of the PDD?	1, 3	Please see B.4.5.	þ	þ
F.3.2. Is the data provided verifiable? Has sufficient evidence been provided to the validation team?	1, 3	See F.3.1.	þ	þ
F.3.3. Does the additional information substantiate / support statements given in other sections of the PDD?	1, 3	See F.3.1.	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
F.4. Annex 4: Monitoring information				
F.4.1. If additional background information on monitoring is provided: Is this information consistent with data presented in other sections of the PDD?	1	Please see B.7.2.4	þ	þ
F.4.2. Is the information provided verifiable? Has sufficient evidence been provided to the validation team?	1	See F.4.1.	þ	þ
F.4.3. Do the additional information and / or documented procedures substantiate / support statements given in other sections of the PDD?	1	See F.4.1	þ	þ

Table 2 Resolution of Corrective Action and Clarification Requests

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
Corrective Action Request No.1. Please complete the time schedule. Please add the time of FSR and Commissioning.	A.2.1.	The time of FSR and commissioning has been added in the time schedule in the PDD.	þ This has been verified by the validation team in the final PDD.
Corrective Action Request No.2. The geographical coordinates should be specified including geographical seconds. The claimed coordinates used with Google Earth result in a point in the middle of the road at the top of a hill.	A.4.1.1.	The geographical coordinates have been specified including geographical seconds in PDD.	þ This has been verified by the validation team in the final PDD.
Clarification Request No. 1. The purchase agreement of the main equipments is not available. Please provide it to the validator.	A.4.3.5.	The project will start in October, so the project entity has not signed the purchase agreement until now .The list of main equipments will be sent to validator by EMS on 07/09/2007.	þ The validator has gotten the providers list of the main equipments.
Corrective Action Request No.3. The crediting period will start after registration of this project, so the starting and end date should be revised.	A.4.4.2.	The start date of the crediting period has been revised	þ This has been verified by the validation team in the final PDD.
Clarification Request No. 2. The grid connection contract should be provided to the validator.	B.3.4.	The documents will be sent to validator by EMS on 07/09/2007.	þ The approval on the application for the grid connected has been verified by the validator on

			10/09/2007.
Corrective Action Request No.4. "Baseline scenario 1" should be described in accordance with the methodology ACM0004. "WHR for power generation project" should be deleted in the revised PDD.	B.4.1.	"WHR for power generation project" has been deleted in the revised PDD.	þ This has been verified by the validation team in the final PDD.
Corrective Action Request No.5. The calculation of the grid factor is wrong and the calculation in the Word version and the PDF version is different. Please correct and clarify. Please deliver the evidence that CDM has been considered before construction.	B.4.5.	The calculation of the grid factor has been corrected. The documents evidence that CDM has been considered before construction will be sent to validator by EMS on 07/09/2007.	þ The calculation of the grid factor has been verified by the validation team in the final PDD. The validator has gotten the agreement of CDM development which was signed by Luoyang Huanghe Tongli Cement Co., ltd and Shanghai Chuanji Investment Management Co., Ltd. on 08/09/2006 which is before the starting date of the proposed project.
Clarification Request No. 3. An excel sheet that allows the recalculation (including the formula) should be delivered to the validator. The Estimated annual output (60,800MWh) in Table B 5-1 should be consistent with the data 55,940MWh of page 2 and the data 60.800MWh in B.7.1.	B.5.5.	The excel sheet will be delivered to validator by Email. The parameters totally included in the revised PDD. 60800MWh is annual Power output by the project activity, 55940 MWh of page 2 is the annual supplied to Grid. 55940 MWh is equal to Power consumed by the project activity 4,860MWh subtract from the annual output 60800MWh.	þ This has been verified by the validation team in the final PDD.

Clarification Request No. 4. The quoted evidence regarding the barriers has to be delivered as PDF or hard copy to the validator.	B.5.8.	Most of the quoted evidence as hard copy has been sent to validator and the rest will be sent to validator by EMS on 07/09/2007.	þ The hard copies have been verified by the validator.
Corrective Action Request No.6. Please see B.4.5. The parameter EG_{GEN} is copied for many times the other parameters should be provided.	B.6.2.1.	The parameters totally included in the revised PDD.	þ This has been verified by the validation team in the final PDD.
Corrective Action Request No.7. In B.6.3. Step 6.3-4 of the PDD: the emission reductions of the project activity are 52,833 tCO_2e different from the data in the B.6.4. It should be corrected.	B.6.3.3	This part has been corrected in PDD.	þ This has been verified by the validation team in the final PDD.
Corrective Action Request No.8. The total expected emission reductions of the project activity in the 10 years crediting period should be 523,080 tCO2e. The data 528.080 tCO2e before the form in B.6.4 should be corrected.	B.6.4.4.	This part has been corrected in PDD.	þ This has been verified by the validation team in the final PDD.
Corrective Action Request No.9. The parameters required according to the methodology to monitor the project emission should be completely included in the revised PDD and the justification of each parameter needs to be given in tables. If there are parameters not needed, please mark this in the adequate table as “not applicable”.	B.7.1.1.	The parameters totally included in the revised.	þ This has been verified by the validation team in the final PDD.

Corrective Action Request No.10. - The value of data applied for the emission reduction calculation in section B. 5 of the PDD shall be presented in the table; - The accuracy of the electricity meter, the calibration procedure, the calibration standard and the related process of monitoring, recording and archiving data shall be described in the revised PDD.	B.7.1.4.	The value of data applied for the emission reduction calculation in section B. 5 of the PDD have been presented in the table; The accuracy of the electricity meter, the calibration procedure, the calibration standard and the related process of monitoring, recording and archiving data have been described in the revised PDD.	þ This has been verified by the validation team in the final PDD.
Corrective Action Request No.11. The third party calibration, frequency of calibration and accuracy should be mentioned. A principal diagram of the monitoring system has to be included (incl: back-up lines and all connections to the grid).	B.7.2.4.	The third party calibration, frequency of calibration, accuracy and simplified electrical diagram have been added to the revised PDD.	þ This has been verified by the validation team in the final PDD.
Corrective Action Request No.12. How were the stakeholders identified? How many people are effected (residents)? Please deliver the pictures of the meetings to the validator. There is no information about the meeting in March 2007 in the PDD.	E.1.1.	The stakeholders are the people who will be affected by the operation of the project activity, mainly the residents around the site of the project and the workers in the company. There are few residents around the site of the project because where is far away city central, so most of the stakeholders are the workers. The picture of the survey has been added in the PDD. The evidence of the meeting in March 2007 in the PDD has been sent to validator.	þ The evidence has been verified by the validator.
Corrective Action Request No.13. What kind of media was used to inform them (evidence)?	E.1.2.	The representatives and experts from local authorities were invited by phone. The sign up sheet will be sent to validator by EMS on 07/09/2007.	þ The notification has been verified by the validation

		The meeting of the representatives from the company and residents was announced by post and phone. The notification has been sent to validator. The survey was carried out by face to face consultation.	team.
Corrective Action Request No.14. Please revise the version and date of the PDD as it is the same as the GSP PDD		The version and date of the PDD have been updated.	þ
Corrective Action Request No.15. Please remove the yellow colour in the PDD (p. 5, p22, p38,)		The yellow colour in the PDD has removed.	þ
Corrective Action Request No.16. Please explain why exactly 50% of the Yuhe project has been used for the investment cost as well as for the electricity generation. It would be expected that the 9 MW WHR is more expensive than the 18 MW WHR per MW.		The fixed investment of Yuhe is 122.91million RMB and Huanghe is 60.26 million RMB, as quoted from the FSR.	þ The difference between the two projects is mainly in the amount of equipment. By doubling the equipment it can not be expected that the price will decrease significantly in the range of this project. The only difference may occur in the connection costs of the equipment. But it is difficult to estimate these cost reductions in the state of early planning.
Corrective Action Request No.17. The Total investment in the Excel sheet is not consistent. It is 60.26 mRMB in the upper part but 62.73 in the PDD and if you add up the components.		The fixed investment is 60.26 mRMB and the total investment is 62.73 mRMB which including the fixed investment and circulating capital. The total investment has been added in the Excel for the sake of clarity.	þ The IRR calculation has been checked and is correct now.

Corrective Action Request No.18. Please include the sensitivity analysis into the IRR calculation sheet.		The sensitivity analysis has been added into the Excel sheet.	þ The assumption of the sensitivity analysis are reasonable as it is not probable that the investment costs or operational will decrease more than 10%. As the electricity production is linked to the production process an increasing electricity generation can be ruled out as well.
Corrective Action Request No.19. Common practise, p13: It is not clear why the 36 projects using foreign technology are not similar to the project activity. As foreign technology may be more expensive it is not clear why more expensive technology can be economically used but cheap domestic technology not. The first of its kind argument is acceptable but the other Tongli projects should be included (… together with other CDM projects such as ….) because otherwise only one project will be additional.		The common practice has been modified and the document evidence has been sent to auditor by E-mail.	þ The quoted references have been checked by the local auditor and confirmed.

Industrie Service

Annex 2: Information Reference List

Reference No.	Document or Type of Information
1.	Project Design Document for CDM project "Luoyang Huanghe Waste Heat Recovery and Utilization project", version HH01
2.	Consolidated baseline methodology for waste gas and/or heat and/or pressure for power generation
3.	Tool for the demonstration and assessment of additionality, version 03
4.	Participant list of on-site interview, signed on July 10th, 2007
5.	On-site interviews at the office in Luoyang Huanghe cement Co., Ltd in Luoyang City in Henan Province, China., conducted on July 09th, 2007 by auditing team of TÜV SÜD: Validation team: Ms. Xuemei Li CDM Auditor, TÜV SÜD Industrie Service GmbH Mr. Ling Liu CDM Auditor Trainee, TÜV SÜD Industrie Service GmbH Interviewed persons: Mr. Baoqiang Liu General manager, Luoyang Huanghe Tongli Coment Co., Ltd Mr. Xinguo Ma Vice general manager , Luoyang Huanghe Tongli Coment Co., Ltd Mr. Wenwei Yao General Accountant, Luoyang Huanghe Tongli Coment Co., Ltd Mr. Zhanjing Wang Manager, Luoyang Huanghe Tongli Coment Co., Ltd Mr. Shanguo Gong Director, Luoyang Huanghe Tongli Coment Co., Ltd Ms. Ranqiu Ma Vice general manager, Shanghai Chuanji Investment Management Co., Ltd. Ms. Zhiwei Ma Project manager, Shanghai Chuanji Investment Management Co., Ltd.
6.	The feasibility study report of Luoyang Huanghe Tongli Cement Co., Ltd. New Dry-process Kilns Production Line WHR Power Generation project, issued by Luoyang heavy-industry mine machinery engineering design institute, dated Oct 2006
7.	The record list of Henan Province Corporation Investment Projects, Luoyang Huanghe Tongli Cement Co., Ltd. Waste Heat Recovery and Utilization Project (9MW), project No., Yu Luo Shi Neng [2006] 0266, issued by Luoyang City Development and Reform Commission, dated Dec. 15th, 2006
8.	The Environment Impacts Report Table of Construction Project, Luoyang Huanghe Tongli Cement Co., Ltd. Waste Heat Recovery and Utilization Project (9MW), evaluated by Henan Construction Material Institute, dated Feb 2007.

Reference No.	Document or Type of Information
9.	Approval of environment impact report table of Luoyang Huanghe Tongli Cement Co., Ltd. WHR project, issued by Luoyang Environment Protection Bureau, file No., Luo Huan Jian Biao [2007] 39#, dated March 9th, 2007
10.	The minute of the stakeholders meeting of Luoyang Huanghe Tongli Cement Co., Ltd. WHR project, dated Dec. 18th, 2006
11.	The summary of the comments from the stakeholders of Luoyang Huanghe Tongli Cement Co., Ltd. WHR project, dated Dec. 28th, 2006
12.	List of participants in the stakeholders meeting of Luoyang Huanghe Tongli Cement Co., Ltd. WHR project, dated Dec. 28th, 2006
13.	The Monitoring and Management Handbook of WHR Power generation station, issued by Huanghe Tongli Cement Co., Ltd.
14.	The training plan for the production workers of the WHR power generation project of Province Investment, made by Luoyang heavy-industry mine machinery engineering design institute, dated March. 9th, 2007
15.	The third edition of Project Economic Evaluation Methods and Parameters, 2006, page 74
16.	The application for the grid connection, issued by Luoyang Huanghe Tongli Cement Co., Ltd, dated June, 15th, 2007
17.	Approval of the application for the grid connection, issued by Luoyang City Power Bureau, dated June, 16th, 2007
18.	The inform of decision-making opinion of Luoyang City Commercial Bank, file No., 20072403, dated Mar. 17th, 2007
19.	The agreement of the meters calibration, signed by Luoyang Hanghe Tongli Cement Co., Ltd and Yiyang County Quality Supervising Test Center, dated Aug. 16th, 2007
20.	The project schedule, issued by Luoyang Hanghe Tongli Cement Co., Ltd, dated Mar. 28th, 2007
21.	CDM Project Development Agreement, signed by Luoyang Huanghe Tongli Cement Co., Ltd and Shanghai Chuanji Investment Management Co., Ltd., dated Sep. 8th, 2006
22.	The final PDD, dated Jan. 10th, 2008, submitted on Jan. 11th, 2008.
23.	The final IRR calculation spreadsheet, submitted on Jan. 11th, 2008.
24.	The evidence for common practice "the reply to the cement kiln waste heat electricity generation equipments", issued by Henan Province Construction Material Industrial Commission, dated May 25th, 2006
25.	Waste Heat Recovery Project for the 5000t/d Cement Production Line of Luoyang Huanghe Tongli Cement Co. Ltd; Equipment Purchase and Transportation Agreement; dated September 2007
26.	Waste Heat Recovery Project for the Cement Production Line of Luoyang Huanghe Tongli Cement Co. Ltd; Feasibility Study Report; dated October, 2006
27.	Loan Agreement; dated January 2008
28.	The WHR power station of Luoyang Huanghe Tongli Co., ltd.; Report of Work Commencement; The fact Construction Start Date: 28th