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# Validation Report

CAMCO INTERNATIONAL LIMITED  
VALIDATION OF THE CDM-PROJECT:

ANGANG WASTE GAS RECOVERY AND GENERATION PROJECT

REPORT NO. 983219

14 APRIL 2009

TÜV SÜD Industrie Service GmbH  
Carbon Management Service  
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Validation of the CDM Project:  
 Angang Waste Gas Recovery and Generation Project



Industrie Service

Report No.	Date of first issue	Revision No.	Date of this revision	Certificate No.
983219	12-01-2009	3	14-04-2009	-

<b>Subject:</b> Validation of a CDM Project	
<b>Accredited TÜV SÜD Unit:</b> TÜV SÜD Industrie Service GmbH Certification Body "climate and energy" Westendstr. 199 80686 Munich Germany	<b>TÜV SÜD Contract Partner:</b> TÜV SÜD Industrie Service GmbH Carbon Management Service Westendstr. 199 80686 Munich Germany
Project Participant: <b>CAMCO International Limited</b> Channel House, Green Street, St. Helier City, Jersey <b>Noble Carbon Credits Limited</b> 1st Floor Gilford Hall, 13 Gilford Road, Dublin, Sandymount, Ireland <b>Anyang Iron &amp; Steel Co., Ltd.</b> Meiyuanzhuang, Yindu District, Anyang City, Henan Province, China	Project Site(s): Yindu District, Anyang City, Henan Province, China GPS coordinates: 114°10'29.9"E , 36°3'56.4"
Project Title: Angang Waste Gas Recovery and Generation Project	
Applied Methodology / Version: ACM0012 / Version 02	Scope(s): 1, 4
First PDD Version: Date of issuance: 01-03-2007 Version No.: 01 Starting Date of 1 <sup>st</sup> GSP: 14-03-2007 PDD Version for 2 <sup>nd</sup> GSP: Date of issuance: 26-06-2008 Version No.: 6.0 Starting Date of 2 <sup>nd</sup> GSP: 30-07-2008	Final PDD version: Date of issuance: 21-11-2008 Version No.: 6.1
<b>Estimated Annual Emission Reduction:</b>	<b>273,066 tCO<sub>2</sub>e</b>
<b>Assessment Team Leader:</b> Dr. Sven Kolmetz	<b>Further Assessment Team Members:</b> Cuiyun (Rachel) Zhang Baoqi Sun

**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

<b>ACM</b>	Approved Consolidated Methodology
<b>AM</b>	Approved Methodology
<b>AMS</b>	Approved Methodology Small scale
<b>BM</b>	Build Margin
<b>CAR</b>	Corrective Action Request
<b>CB</b>	Certification Body “Climate and Energy” of TÜV SÜD Industrie Service GmbH
<b>CDM</b>	Clean Development Mechanism
<b>CDM EB</b>	CDM Executive Board
<b>CER</b>	Certified Emission Reduction
<b>CM</b>	Combined Margin
<b>CMP</b>	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
<b>CR / CL</b>	Clarification Request
<b>DNA</b>	Designated National Authority
<b>DOE</b>	Designated Operational Entity
<b>EF</b>	Emission Factor
<b>EIA / EA</b>	Environmental Impact Assessment / Environmental Assessment
<b>ER</b>	Emission Reduction
<b>FAR</b>	Forward Action Request
<b>FSR</b>	Feasibility Study Report
<b>GHG</b>	GreenHouse Gas(es)
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>IRL</b>	Information Reference List
<b>IRR</b>	Internal Rate of Return
<b>KP</b>	Kyoto Protocol
<b>MP</b>	Monitoring Plan
<b>OM</b>	Operational Margin
<b>PDD</b>	Project Design Document
<b>PP</b>	Project Participant
<b>TÜV SÜD</b>	TÜV SÜD Industrie Service GmbH
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>VVM</b>	Validation and Verification Manual

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## 1 INTRODUCTION

### 1.1 Objective

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

The project activity discussed by this validation report has been submitted under the project title **“Angang Waste Gas Recovery and Generation 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:

- The Kyoto Protocol, in particular § 12 and modalities and procedures for the CDM
- Decision 2/CMP1 and Decision 3/CMP.1 (Marrakech Accords)
- Further COP/MOP decisions with reference to the CDM (e.g. decisions 4 – 8/CMP.1)
- Decisions and specific guidance by the EB published under <http://cdm.unfccc.int>
- Guidelines for Completing the Project Design Document (CDM-PDD), and the Proposed New Baseline and Monitoring Methodology (CDM-NM)
- Baselines and monitoring methodologies (including GHG inventories)
- Management systems and auditing methods
- Environmental issues relevant to the sectoral scope applied for
- Applicable environmental and social impacts and aspects of CDM project activity
- Sector specific technologies and their applications
- Current technical and operational knowledge of the specific sectoral scope and information on best practice

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

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

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

## 2 METHODOLOGY

The project assessment applies standard auditing techniques to assess the correctness of the information provided by the project participants. The assessment is based on the “Clean Development Mechanism Validation and Verification Manual”, version 01. The work starts with appointment of team covering the technical scope(s), sectoral scope(s) and relevant host country experience and expertise for evaluating the CDM project activity. Once the project is made available for the stakeholder consultation process, members of the team carry out the desk review, follow-up actions, resolution of issues identified and finally preparation of the validation report. The prepared validation report and other supporting documents then undergo an internal quality control by the CB “climate and energy” before submission to the CDM-EB.

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

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

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

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

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

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

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

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

## 2.1 Appointment of the Assessment Team

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

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

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

Name	Qualification	Coverage of technical scope	Coverage of sectoral expertise	Host country experience
Dr. Sven Kolmetz	ATL	☑	☑	☑
Cuiyun (Rachel) Zhang	GHG-A	☑	☑	☑
Baoqi Sun	GHG-A	☑	☑	☑

**Dr. Sven Kolmetz** is physicist and the head at the department "TÜV Carbon Management Service"



located in the head office of TÜV SÜD IS GmbH 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.

**Ms. Cuiyun Zhang** is the project manager and the Deputy Head of CB at the department “TÜV Carbon Management Service” located in the head office of TÜV SÜD IS GmbH in Munich. She has years of experience in the field of CDM validation and verification which includes the knowledge of waste heat recovery projects. In her position of this project, she is responsible for the implementation of validation and assessment.

**Mr. Baoqi Sun** is a CDM auditor at Jiangsu TUV Product Service Ltd. He is based in Shanghai. In his position he is responsible for the implementation and successful performance of validation, verification and certifications audits. He has received intensive training in the CDM validation process and participated already in several CDM project assessments as an auditor.

## 2.2 Review of Documents

A first version of the PDD was submitted to the DOE in March 2007. The first PDD version submitted by the PP and additional background documents related to the project design and baseline were reviewed to verify the correctness, credibility and interpretation of the presented information, furthermore a cross check between information provided and information from other sources have been done as initial step of the validation process. A complete list of all documents and proofs reviewed is attached as annex 2 to this report.

## 2.3 Follow-up Interviews

On 1st April 2007 TÜV SÜD performed interviews and a physical site inspection with project stakeholders to confirm relevant information and to resolve issues identified in the first document review. The table below provides a list of all persons interviewed in this context.

Name	Organisation
Mr. Zhang Qingyou	Anyang Iron & Steel Group Co., Ltd.
Mr. Gu Lin	Anyang Iron & Steel Group Co., Ltd.
Mr. Liu Yongming	Anyang Iron & Steel Group Co., Ltd.
Mr. Zhang Fengyi	Anyang Iron & Steel Group Co., Ltd.
Ms. Zhou Qiong	WISDRI Engineering & Research Inco., Ltd.
Ms. Sophie Chou	CAMCO International
Mr. Eddie Zhang	CAMCO International

## 2.4 Further cross-check

During the validation process, the team makes reference to available information related to similar projects or technologies as the CDM project activity. The documentation has also been reviewed against the approved methodology/ies applied to confirm the appropriateness of formulae and correctness of calculations.

## **2.5 Resolution of Clarification and Corrective Action Requests**

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

The final PDD version that was submitted in November 2008 serves as the basis for the final assessment presented herewith. Changes are not considered to be significant with respect to the qualification of the project as a CDM project based on the two main objectives of the CDM, i.e. to achieve a reduction of anthropogenic GHG emissions and to contribute to a sustainable development.

## **2.6 Internal Quality Control**

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

After confirmation of the PP the validation opinion and relevant documents are submitted to the EB through the UNFCCC web-platform.

### 3 SUMMARY

The assessment work and the main results are described below in accordance with the VVM reporting requirements. The reference documents indicated in this section and Annex 1 are stated in Annex 2.

#### 3.1 Approval

The project participants are Anyang Iron & Steel Co., Ltd. of People's Republic of China, Noble Carbon Credits Limited of Ireland and Camco International Limited of United Kingdom of Great Britain and Northern Ireland. The host Party China and further participant Parties United Kingdom of Great Britain and Northern Ireland meet the requirements to participate in the CDM.

The DNA of the United Kingdom has issued two LoAs on 12 December 2007 authorizing Camco International Limited (IRL 38) and on 22 February 2008 authorizing Noble Carbon Credits Limited (IRL 39) as project participants respectively. The DNA of China has also issued a LoA (IRL 37) on 22 May 2007 authorizing Anyang Iron & Steel Co., Ltd. as a project participant. TÜV SÜD received these letters from the project participants directly and considers the provided letters as authentic.

The China LoA has further been double-checked with the CDM project webpage sponsored by the Department of Climate Change, NDRC (<http://cdm.ccchina.gov.cn>), which further confirming the approval of this CDM project.

Furthermore, after checking the provided LoAs, TÜV SÜD confirms that these three letters of approval refer to the precise proposed CDM project activity title in line with the title in the PDD "Angang Waste Gas Recovery and Generation Project".

Three letters also indicate that each participating Party is a Party to the Kyoto Protocol, and that the participation in the Angang Waste Gas Recovery and Generation Project is voluntary. The Chinese LoA also confirms that the proposed CDM project activity contributes to the sustainable development of China (host country). Based on the information given in these letters, TÜV SÜD considers the approval as unconditional with respect to these items.

The respective Party's DNA, in this case:

- the National Development and Reform Commission of the People's Republic of China; and
- Secretary of State for Environment Food and Rural Affairs of United Kingdom

has issued these three LoA.

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

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

#### 3.2 Participation

The participation of three participants which have been mentioned above has been approved by the corresponding Parties, which is confirmed by the issued LoAs.

The means of validation were equivalent to those described in section 3.1 in regard to the approval process of the project activity.

#### 3.3 Project design document

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

The most recent version of the PDD form is used.

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

### 3.4 Project description

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

Anyang Iron and Steel Co., Ltd. is a large manufacturer of pig iron, steel, and steel products headquartered in Henan Province of China. The aim of proposed project, Angang Waste Gas Recovery and Generation Project, is to recover the surplus combustible waste gas primarily from blast furnaces, steel converters and coke ovens, to generate electricity and substitute for the same amount which would be imported from Central China Power Grid (CCPG) in the absence of the proposed project. The Project comprises the waste gas recovery system and three steam generation units with installation capacities of 30MW, 7.5MW and 6 MW, totally 43.5MW. Based on the gas balance sheet (IRL-43) of the AIS, total amounts of gas generation in 2006, 2007, 2008 are 1,085,781Nm<sup>3</sup>/h, 1,305,807 Nm<sup>3</sup>/h, 1,360,126Nm<sup>3</sup>/h respectively as steel production are 5,953,600t, 7,817,000t, 7,978,800t respectively. Gas demand of the proposed project is 125,429Nm<sup>3</sup>/h, and annual operation hour is estimated 7000h per year, so total 878 million Nm<sup>3</sup> will be used in the proposed project as the main fuel to generate electricity 280.5 GWh/y which would be flared and released in to atmosphere in the absence of the project activity. Therefore, the Project could take full advantage of unused waste gas to generate electricity and therefore reduce an estimated 273,066 tons of CO<sub>2</sub>e per year.

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

- Review of data and information (see annex 2), cross check the same with other sources if available.
- An on-site visit has been performed and relevant stakeholder and personnel with knowledge of the project were interviewed, in case of doubt further cross checks through additional interviews have been done.
- Finally information related to similar projects or technologies as the CDM project activity have been used if available to confirm the accuracy and completeness of the project description.

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

### 3.5 Baseline and monitoring methodology

#### 3.5.1 Applicability of the selected methodology

Compliance with each applicability condition as listed in the chosen baseline and monitoring methodology ACM0012 Version 02 has been demonstrated. Via the document review and site inspection, the validation team could confirm that the project activity is applicable to the selected methodology.

- The project will use waste gas to generate electricity
- The project will not use the waste pressure.
- Electricity generated will only be consumed within AIS
- Electricity generated will not be exported to grid.
- Project owner has the ownership of facilities of electricity generation and waste gas generation.

- No mandatory regulation restrict industry facility owner generating waste gas from using fossil fuel prior to project.
- Project uses waste gas from existing blast furnace, converter, and coke ovens. No expansion of capacity planned.
- In absence of project, waste gas would be flared and release into atmosphere.
- Project owner will claim the emission reduction as it has ownership on both electricity generation and waste gas generation. No agreement is necessary.
- Credit period is chosen as 10 years which is shorter than equipments lifetime currently used.
- Credit will not be claimed by project owner when waste gas was released during abnormal operation.
- Project will only generate electricity by using waste gas, and it is not a cogeneration project.

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

The Methodology specific protocol included to the Annex 1 documents the assessment process, including the steps taken. The results on the compliance check as well as the relevant evidence are explicitly presented in annex 1.

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

Emission sources which are not addressed by the applied methodology and which are expected to contribute more than 1% of the overall expected average annual emissions reduction have not been identified.

### 3.5.2 Project boundary

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

- Facilities where waste gas is generated include blast furnaces, converters, coke ovens
- Facilities where electricity is generated, including the boilers, the turbine and the generator and all other auxiliary equipment of this proposed Project
- Electric system from which electricity is generated and exported to project site, that is Central China Power System including Henan province, Hubei province, Hunan province, Jiangxi, Sichuan province and Chongqing.

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

- The delineation of power grids in China by China DNA (NDRC) (more information could be acquired via <http://cdm.ccchina.gov.cn/english/index.asp>).
- Geographical coordinates of project site issued by An Yang City Planning and Design Institute

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

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

### 3.5.3 Baseline identification

In accordance with methodology ACM0012 version 02, baseline should be identified with 4 steps:

In PDD, the following alternatives are determined for:

- Waste gas use in the absence of the project activity; and
- Power generation in the absence of the project activity

Step 1: Define the most plausible baseline scenario for the generation of electricity using the following baseline options and combinations

For the use of waste gas, the baseline alternatives are:

- W1 Waste gas is directly vented to atmosphere without incineration;
- W2 Waste gas is released to the atmosphere after incineration or waste heat is released to the atmosphere
- W3 Waste gas/heat is sold as an energy source;
- W4 Waste gas/heat/pressure is used for meeting energy demand.

In conclusion in PDD, the scenario W2 and W4 are plausible baseline scenarios for the use of the waste gas.

After check the Gas Security Regulations for Industrial Enterprises GB6222-2005 (IRL-42) and Manufactured Gas standard (IRL-48), the audit team confirmed that the conclusion above is reasonable.

As to power generation, there are eight baseline alternatives detailed in the methodology, namely:

- P1 Proposed project activity not undertaken as a CDM project activity;
- P2 On-site or off-site existing/new fossil fuel fired cogeneration plant;
- P3 On-site or off-site existing/new renewable energy based cogeneration plant;
- P4 On-site or off-site existing/new fossil fuel based existing captive or identified plant;
- P5 On-site or off-site existing/new renewable energy based existing captive or identified plant;
- P6 Sourced Grid-connected power plants;
- P7 Captive Electricity generation from waste gas (if project activity is captive generation with waste gas, this scenario represents captive generation with lower efficiency than the project activity.);
- P8 Cogeneration from waste gas (if project activity is cogeneration with waste gas, this scenario represents cogeneration with lower efficiency than the project activity).

In conclusion in PDD, the scenario P1 and P6 are plausible baseline scenarios for power generation.

As the proposed project is for electricity generation only, scenario P2, P3 and P8 were excluded. After check the Notice from the General Office of the PRC State Council on Strictly Prohibiting Constructing Thermal Power Units with the Capacity under 135MW (IRL-41), scenario P4 was excluded. There is no renewable energy sources near the project site, scenario P5 was also not plausible and realistic option. As the gas balance sheet of AIS (IRL-43) indicated that there is no captive power plant within the company which used waste gas as fuel, so scenario P7 was also excluded.

Audit team confirmed that the conclusion above is reasonable.



In summary, there are two realistic and credible alternatives. They are:

Scenario	Baseline options		Description of situation
	Waste gas	Power	
1	W2	P6	Waste gas would be flared and released to the atmosphere, electricity is obtained from the grid.
2	W4	P1	The Proposed Project activity not undertaken as a CDM Project activity

The combination W2/P1 and W4/P6 were not plausible after discussion in PDD.

Based on Steam Balance Sheet of AIS (IRL-44) for previous 4 years, audit team confirmed that residual steam which has been vented is 34t/h, 80t/h, 127t/h, and 147t/h in 2005, 2006, 2007, 2008 respectively, there is no energy demand within the company, so scenario W4/P6 is not plausible. Hence, the conclusion above is reasonable.

Step 2: Identify the fuel for the baseline choice of energy source taking into account the national and/or sectoral policies as applicable

Both scenarios (1 and 2) are in line with the national laws.

Step 3: Step 2 and/ or Step 3 of the latest approved version of the “Tool for the demonstration and assessment of additionality” shall be used to identify the most plausible baseline scenario by eliminating non-feasible options.

Section B.5 demonstrates that scenario 2 identified above is clearly not economically attractive

Therefore only one baseline scenario remains:

Scenario	Baseline options		Description of situation
	Waste gas	Power	
1	W2	P6	Waste gas would be flared and released to the atmosphere and electricity is obtained from the grid.

As the combination W4/P1 face significant financial barriers and was not economically attractive to project owner, so the only scenario W2/P6 was left as the baseline scenario alternative.

Step 4: If more than one credible and plausible scenario remain, the alternative with the lowest baseline emissions shall be considered as the most likely baseline scenario.

This step is omitted as only one baseline scenario remains.

Conclusions:

The baseline scenario of the Project is:

Baseline Scenario	Description of situation
-------------------	--------------------------

Waste gas	Power	
W2	P6	Waste gas would be flared and released to the atmosphere and electricity is obtained from the grid

Audit team can confirm that baseline scenario analysis in PDD is reasonable and the only W2/P6 was remained as the baseline scenario in conclusion.

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

- Gas Security Regulations for Industrial Enterprises GB6222-2005 (IRL-42)
- Notice from the General Office of the PRC State Council on Strictly Prohibiting Constructing Thermal Power Units with the Capacity under 135MW (IRL-41)

TÜV SÜD has determined that no reasonable alternative scenario has been excluded.

Based on the validated assumptions on calculations TÜV SÜD considers that the identified baseline scenario is reasonable.

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

A verifiable description of the baseline scenario has been included to the PDD.

In regard to item 86 of VVM, TÜV SÜD confirms that:

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

### 3.5.4 Algorithm and/or formulae used to determine emission reductions

#### 3.5.4.1 Baseline Emissions

TÜV SÜD has assessed the calculations of project emissions, baseline emissions and leakage and emission reductions. Corresponding calculations were carried out based on calculation spreadsheets. The parameters and equations presented in the PDD and further documentation have been compared with the information and requirements presented in the methodology and respective tools. The equation comparison has been made explicitly following all the formulae presented in the calculation files.



The calculation of the baseline emissions followed the procedures described in the methodology ACM0012 Version 02. According to the methodology tool (Tool to calculate the emission factor for an electricity system/version 1), the most recent data at the time of submission of PDD to the DOE for validation are used for the calculation. In this case, the available data at the time of Re-GSP (July 30, 2008) which are derived from the China Yearbooks in 2005-2007 are considered. As the baseline scenario is importing electricity from Central China Power Grid, it met the applicability condition of Scenario 1 in baseline emission calculation in methodology. The Central China Power Grid is considered to be the project boundary.

The operating margin emission factor ( $EF_{OM}$ ) was determined based on the simple OM method. The ex-ante option was chosen for this calculation. The calculation of the build margin emission factor ( $EF_{BM}$ ) was based on modified methods agreed by the EB, because plant specific data are not available in China. The emission factor of the thermal power plants was calculated by the proportion of the emissions of coal, gas and oil times the emission factor of the best available coal, gas and oil power plant as defined and published by the Chinese DNA in 2008. The new thermal capacity installation that exceeded 20% in the last years, for which data was available, was finally assessed with this factor.

The baseline calculation was based on the published OM/BM calculation process issued by the NDRC (China DNA) on Aug. 9, 2007 for first Global Stakeholder Process. The values indicated in the PDD can be accepted for the baseline calculation.

The value for the combined margin emission factor ( $EF_{CM}$ ) was determined using the weighted average of the  $EF_{BM}$  and  $EF_{OM}$  using the default values for the factors as described in the methodology ( $EF_{CM}=0.5EF_{BM}+0.5EF_{OM}$ ).

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

Based on the information reviewed it can be confirmed that the sources used are correctly quoted and interpreted in the PDD.

The values presented in the PDD are considered reasonable based on the documentation reviewed, further references and the result of the interviews.

The baseline methodology has been correctly applied following the requirements.

The estimated of the baseline emissions can be confirmed as the same have been replicated by the audit team using the information provided.

Detailed information on the verification of the parameters used in the equations can be found in the annex 1.

### 3.5.5 Project emissions

According to methodology requirement, project emission includes the emissions from on-site consumption of fossil fuels and the emissions from on-site consumption of electricity by auxiliary equipment. Because there is no fossil fuel which will be utilized on site, the emission due to the consumption of fossil fuel needs not to be considered.

The project emission caused by the consumption of electricity which is supplied from the grid might occur. However, this amount of electricity has been considered and deducted from the baseline emission calculation. Therefore, it is reasonable that the project emission is equal to zero in the PDD.

### 3.5.6 Leakage

According to ACM0012, no leakage is applicable under this methodology.

### 3.5.7 Emission Reductions

In summary, the calculation of the baseline emissions, project emissions, leakage and the emission reductions, respectively, can be considered as correct.

### 3.6 Additionality

The additionality of the project has been presented in the PDD using following approach:

Tool for the demonstration and assessment of additionality (version 05, EB39).

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

- Feasibility Study Report (IRL 8)

On site the additionality has been discussed in detail with Anyang Iron & Steel Co., Ltd. Furthermore some documents have been reviewed on-site (for details see annex 2).

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

- Approval of Feasibility Study Report (IRL-9)
- Approval of Environment Impact Assessment (IRL-21)
- Purchasing contract of gas boilers 35t/h (IRL-30)
- Purchasing contract of turbine and generator 30MW (IRL-31)
- Purchasing contract of generation unit 7.5 MW (IRL-32)
- Maintenance and operation cost of boilers and steam turbine-generator unit (IRL-33)

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

#### 3.6.1 Prior consideration of the clean development mechanism

The starting date of the project activity is determined by earliest date at which the purchasing contract of main equipments has been signed, that is December 8<sup>th</sup>, 2006. In order to confirm the same the assessment team has reviewed the following documents: Application Report of Construction Commencement, additionally the assessment team cross checked this information with full commissioning record

Since the starting date of the project activity is determined to be December 8<sup>th</sup>, 2006 which is before 02 August 2008, the PPs have presented the assessment team the following documentation:

#### LIST OF THE ORIGINAL DOCUMENTS PRESENTED

- Aug. 2006 FSR report date (IRL-8), CDM revenues has been considered in financial analysis in Chapter 10 in FSR report, so the report was the evidence of CDM early consideration of the project.
- Sep. 15, 2006 CDM Co-Development Agreement, that was countersigned by Anyang Iron & Steel Co., Ltd and CAMCO International Limited.
- Oct. 24, 2006 EIA approval (IRL-21)
- Oct. 25, 2006 FSR approval (IRL-9)
- Dec. 8, 2006 First stakeholder meeting date (IRL-23)
- Dec. 25, 2006 Second stakeholder meeting date (IRL-25)
- Dec. 8, 2006 30MW steam turbine EPC contract signing date (IRL-10)
- Mar. 14, 2007 First GSP date of EN PDD acc to ACM0004
- Apr. 3, 2007 Site audit by TUV and CAMCO

- Apr. 18, 2007 Application Report of Construction Commencement (IRL-45), which indicates that commence date is Apr. 30, 2007
- May 22, 2007 Issuing date of LoA by China's NDRC (IRL-37)
- Dec.12, 2007 issuing date of LoA by UK DNA to authorize Camco International Limited as project participant (IRL-38)
- Feb. 22, 2008 issuing date of LoA by UK DNA to authorize Noble Carbon Credits Limited as project participant (IRL-39)
- Jul 30, 2008 Second GSP date of PDD EN acc to ACM0012

The original of the documentation presented has been reviewed and cross checked based on interviews with Mr. Zhang Qingyou. The starting date of project is 08/12/2006 according to the purchasing contract of main equipments (IRL-10), date of early CDM consideration is 08/2006 in FSR(IRL-8), CDM Development Agreement (IRL-35) as well as two stakeholder meetings records (IRL-23) (IRL-25) have been verified by the validation team. All the documents and activities can be treated as evidences to confirm the prior CDM consideration.

Additionally, in order to confirm that the PPs have taken real actions to continue the activity as CDM, following timeline has been reviewed against the respective documents presented in the table below:

Activity	Document	Auditor conclusion
Aug. 2006 Feasibility Study Report issued by WISDRI Engineering & Research Inco., Ltd.	FSR report	It is evidence as CDM early consideration.
Sep. 15, 2006 signing date of CDM Co-Development Agreement	CDM Co-Development Agreement	The document has been reviewed by the validation team
Mar 14, 2007 First GSP date of EN PDD acc to ACM0004	PDD with version 1.0	The related information could be confirmed via the UNFCCC website
Apr. 30, 2007 Commencement date of Construction	Application Report of Construction Commencement	It has been verified on site.
Feb 22, 2008, issuing date of LoA by UK DNA to authorize Noble Carbon Credits Limited as project participant	Letter of Approval for the project participation.	It has been reviewed.
Jul 30, 2008 Second GSP date of PDD EN acc to ACM0012	PDD with version 5.0	PDD against ACM0012 has been reviewed.

Hence the project complies with the requirements to demonstrate the prior consideration of the CDM.

### 3.6.2 Identifications of alternatives

The output of the project is supplying electricity to facilities within the Anyang Iron & Steel Co., Ltd.

The list of alternatives to supply the outputs mentioned above, which is presented in the PDD includes the project activity undertaken without being registered as CDM project. The rest of the alter-

natives presented do include all plausible scenarios taking into account the local and sectoral situations for the outputs mentioned. Hence the list of alternatives is considered to be complete.

### 3.6.3 Investment analysis

The PP uses the investment analysis to demonstrate the additionality. It could be verified that the financial returns of the proposed project are insufficient to justify the investment.

The parameters used in the financial calculations have been validated based on Feasibility Study Report (IRL-8). Furthermore the period of time between the finalization of the FSR and the investment decision is only 4 months therefore it can be confirmed that it is unlikely that the input values have materially changed. Furthermore based on a cross check with the following independent sources:

- Letter from Anyang Labor and Security Bureau of employee numbers for proposed project (IRL-36)
- Purchasing contract of turbine and generator 30MW (IRL-31)
- Purchasing contract of gas boilers (IRL-30)
- Maintenance and operation cost of boilers and steam turbine-generator unit (IRL-33)

It can be seen that the parameters are plausible and can be considered acceptable under the project situation.

#### Step 2a Determine appropriate analysis method

The additionality has been evidenced by investment analysis quoted from the Feasibility Study Report and the IRR spreadsheet which reflects the analysis process has been verified by the auditor. The benchmark analysis method is used (Option III).

#### Sub-step 2b: Option III, Apply benchmark method

According to the Methods and Parameters for Economic Assessment of Construction Project (version 3), the benchmark equity IRR (after tax), 13% is used in iron and steel industry to assess whether the proposed project is financial attractive, as the project owner Anyang Iron and Steel Co., Ltd required same rate of return against investment in their core field. The same benchmark is also identified in the Feasibility Study Report.

#### Sub-step 2c: Calculation and comparison of financial indicator

As to the inputs of the IRR calculations, the basic figures and calculation formulae have been evidenced with the Feasibility Report (IRL-8). The IRR spreadsheet completely present the financial analysis process as the FSR did.

Furthermore, additional documents are provided to prove that the total investment, annual generation, the electricity tariff, and the annual O&M cost mentioned in the FSR are realistic:

- Total investment:  
According to Purchasing contract of main equipments (IRL-30, 31, 32), the amount is 35.84 Million RMB; EPC contract of 30 MW electricity generation system (IRL-10), the amount is 52 Million RMB; and Investment cost Break-down for Angang WG project (IRL-49) which include the investment to main equipments and installation, civil construction and auxiliary equipments etc., total amount is about 233 Million RMB. Accordingly in FSR, total investment is 233.05 Million RMB, so audit team confirmed that total investment listed in financial analysis is reasonable.
- Annual generation:

According to the document Electricity generation and supply sheet in 2008 by project (IRL-46), total electricity generation from 3 steam turbine generator units is 278.8GWh, that is lower than 340.5GWh estimated in PDD, equivalently total operation hours is 6408h, which is lower than 7000h which was estimated in PDD. So it can be confirmed that analysis in annual generation in PDD is a little bit overestimated.

- Electricity tariff:

The most sensitive parameter of the IRR calculation is the electricity tariff. During the on site audit, the approval of electricity tariff issued by the Price Bureau of Henan Province in 2006(IRL-47) have been provided and reviewed. The real tariff is 0.454RMB/kWh (including VAT). However, in the IRR spreadsheet, 0.467RMB/kWh(including VAT) is derived from the FSR is used which induces a higher IRR result. Hence, the calculation in the PDD is more conservative.

- Annual O&M cost:

Total O&M costs represent 8% of total fixed investment.

- According to Maintenance and operation cost of boilers and steam turbine-generator unit (IRL-33), actual annual Repairing Cost is 37.29m RMB which exceeds the value 18.07m RMB employed in PDD for conservativeness consideration;
- In accordance with the Letter from Anyang Labor and Security Bureau of employee numbers for proposed project (IRL-36) and the Confirmation letter of salary rate per employee (IRL-50), cost of Wage and Welfare was confirmed reasonable.
- Referring to the Annual Management and overhead cost for each employee (IRL-51), actual management cost is 16.9m RMB which exceeds the value 13.52m RMB employed in PDD for conservativeness consideration
- According to Unit cost of processing BFG (IRL-52), Electricity tariff in Henan province (IRL-47), Power and resource cost in PDD 33.83m RMB was considered reasonable.

Totally, annual O&M cost listed in financial analysis in PDD was considered to be reasonable.

It can be seen that the parameters are plausible and can be considered acceptable under the project situation.

### **Sub-step 2d: Sensitivity analysis**

A sensitivity analysis is performed by taking into account 10% variations in total investment , operational and maintenance costs, electricity tariff, and annual power generation. The sensitive parameters and the vary ranges are consistent with the Economic Analysis chapter of FSR. The 10% range is based on the Chinese regulation for feasibility study reports and within the range, none of the assumed variation of variables the benchmark is met.

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

### **3.6.4 Barrier analysis**

Barrier analysis is not applicable for this project.

### 3.6.5 Common practice analysis

The region for the common practice analysis has been defined as Central China Power Grid which is also the project boundary including Chongqing, Henan Province, Hunan Province, Hubei Province, Sichuan Province and Jiangxi Province. The project activity's technology can be found in different country regions, where different situations can appear. Hence the region has been defined taken into account the kind of technology and the industry type. The assessment team has reviewed the approach presented in the PDD and can confirm that the relevant parameters as location, infrastructure, economical situation and development has been taken into account in order to define the region to be used for the common practice. Based on validation team's host country experience, the presented region can be considered appropriate for the common practice analysis.

The assessment team has reviewed official sources as:

- The power plant list published by Energy Bureau of the NDRC ([http://nyj.ndrc.gov.cn/ggtz/t20050913\\_42429.htm](http://nyj.ndrc.gov.cn/ggtz/t20050913_42429.htm))

- China Electric Power Yearbooks

This information confirms that the list of similar projects presented in the PDD is complete. Additionally the team made a further cross check of the information based on the interviews.

All the similar projects that are not a CDM project have been checked firstly by a review of all documentation available. Furthermore the essential distinctions between these projects and the CDM project under validation have been confirmed with the FSR of this project that waste gas from three kinds of source i.e. steel converters, blast furnaces, and coke ovens was recovered.

Hence it can be confirmed that the proposed CDM activity is not a common practice in the defined region.

### 3.7 Monitoring plan

The monitoring plan presented in the PDD complies with all the requirements of the methodology. The assessment team has checked all the parameters presented in the monitoring plan against the requirements of the methodology; no deviations relevant for the project activity have been found in the plan.

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

For example, a Distribution Control System (DCS) integrated by control units and highly accurate measurement instruments will be installed for the Project generation system. Therefore, the total electricity generation and auxiliary electricity includes electricity consumed by the power generation system will be measured continuously and automatically by the DCS system at the connection point to the transformer station, which will be recorded and collected daily, and archived in electronic form every month by the CDM workgroup which is set up especially for the proposed project. Net Electricity supplied to the facility by the project is obtained by subtracting the auxiliary electricity from the total delivered generation of the project.

In order to calculate fcap, quantities of waste gas for electricity generation during crediting year from steel converters, blast furnaces, and coke ovens respectively will be measured continuously by flow



meters installed at inlet of gas boilers. Monitored data can also be evidence to judge if there are additional gas sources to supply gas to the proposed project.

The monitoring plan is fully in line with the methodology (ACM0012 ver. 2).

Hence it is expected that the PPs will be able to implement the monitoring plan and the emission reductions achieved can be reported ex-post and verified.

### **3.8 Sustainable development**

The LoA of the Host country clearly presents a statement that the project contributes to the sustainable development of the host Party.

### **3.9 Local stakeholder consultation**

The relevant local stakeholders have been invited via Invitation Letter. The evidence of these invitations is IRL #21. The assessment team has reviewed the documentation in order to validate the inclusion of relevant stakeholders and using the local expertise. It can be confirmed that the communication method used to invite the stakeholders can be considered appropriate. The summary of comments presented in the PDD has been cross-checked with the documentation of the stakeholder consultation and it is found to be complete.

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

Hence the local stakeholder consultation has been adequately performed according to the CDM requirements.

### **3.10 Environmental impacts**

The project participants undertake an environmental impact assessment. The assessment team made a document review of the information presented. The IRL #19 Environmental Impact Assessment Report confirms the correctness of the approach used by the PPs. Hence the PPs followed the requirements of the host country regarding the environmental impacts.

#### 4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

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

The following table presents all key information on this process:

<b>webpage:</b> First GSP webpage: <a href="http://cdm.unfccc.int/Projects/Validation/DB/ABL90OP43CIRPD7NG9UA8XKOX CZ7Y3/view.html">http://cdm.unfccc.int/Projects/Validation/DB/ABL90OP43CIRPD7NG9UA8XKOX CZ7Y3/view.html</a> Second GSP webpage: <a href="http://cdm.unfccc.int/Projects/Validation/DB/PWZBCCVCi8M7IYQ9NX4DPMA4B1NRL1/view.html">http://cdm.unfccc.int/Projects/Validation/DB/PWZBCCVCi8M7IYQ9NX4DPMA4B1NRL1/view.html</a>	
<b>Starting date of the global stakeholder consultation process:</b> First GSP date: 14/03/2007 Second GSP date: 30/07/2008	
<b>Comment submitted by:</b> None	<b>Issues raised:</b> -
<b>Response by TÜV SÜD:</b> -	



## 5 VALIDATION OPINION

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

Angang Waste Gas Recovery and Generation Project

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

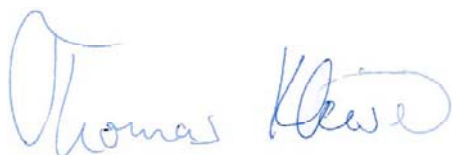
The review of the project design documentation, the subsequent follow-up interviews and the further cross check of references have provided TÜV SÜD with sufficient evidence to determine the fulfilment of stated criteria in the protocol. In our opinion, the project meets all relevant UNFCCC requirements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

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

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

Munich, 14-04-2009

Munich, 14-04-2009



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



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Sven Kolmetz  
Assessment Team Leader

## **Annex 1: Validation Protocol**

## Validation Protocol

Project Title: Angang Waste Gas Recovery and Generation Project

Date of Completion: April 14, 2009

Number of Pages: 60



Industrie Service

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
<b>A. General description of project activity</b>				
<b>A.1. Title of the project activity</b>				
A.1.1. Does the used project title clearly enable to identify the unique CDM activity?	1,2,3	The project is titled with name of project owner and energy source. Hence it can be clearly identified.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.1.2. Are there any indication concerning the revision number and the date of the revision?	1,2,3	Yes, version is 06 and date is 26/06/2008. PDD history was also clearly shown in this section.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.1.3. Is this consistent with the time line of the project's history?	1,2,3	Yes, it is consistent with time line of project's history	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>A.2. Description of the project activity</b>				
A.2.1. Is the description delivering a transparent overview of the project activities?	8 – 14 20-21 29-33	<p>Anyang Iron and Steel Co., Ltd is a large manufacturer of iron, steel and steel products which located in Henan Province of China. The proposed project is a power generation project utilizing the waste mixed gas combined with BFG, LDG and COG generated from blast furnace, converters and coke ovens. In the absence of project activity, the surplus gas is flared. Three sets of steam turbine-generator units with capacity 30MW, 7.5MW, 6MW respectively will be installed. Electricity generated by project would be consumed within the plant.</p> <p><b><u>Clarification Request No. 1.</u></b></p> <ol style="list-style-type: none"> <li>Please include available hour per year of the waste gas from different sources and also the work hour of turbine-generator units consequently.</li> <li>A.2, 2<sup>nd</sup> paragraph: "141,704 Nm3 of combustible waste gas is flared per hour"</li> </ol> <p>Page 25, last paragraph: "based on gas balance sheet, maximum quantity of waste gas ...is 136,121Nm3/h in year 2006"</p>	CR1	<input checked="" type="checkbox"/>

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		<p>Please clarify which value is the most suitable one and used in fcap calculation.</p> <p>As shown in PDD, 13.4% of total waste gas, also 141,704 Nm3/h of waste gas is flared, but according to gas balance and technical description in FSR, value mentioned above is only from the blast furnace gas, it did not include the converter gas and coke oven gas, please also clarify that.</p> <p>3. Please prepare emission reduction calculation in independent spreadsheet and provide to DOE.</p>		
A.2.2. What proofs are available demonstrating that the project description is in compliance with the actual situation or planning?	8 – 14 29-33	<p>The project activity is the displacement of purchasing electricity by coal fired power plants with electricity generated by utilizing waste gas combined with BFG, LDG and COG. following data provide evidences for project:</p> <ul style="list-style-type: none"> <li>- Feasibility study report</li> <li>- EPC contract of 30MW turbine-generator units</li> <li>- Environmental Impact Assessment</li> </ul> <p>The required data are delivered in PDD, and they have been evidenced during audit.</p>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.3. Is the information provided by these proofs consistent with the information provided by the PDD?	8 – 14 20-21 29-33	<p>The required data are delivered in PDD, and they have been evidenced during audit</p>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.4. Is all information presented consistent with details provided by further chapters of the PDD?	8 – 14 20-21 29-33	<p>See CR1, some figures in PDD need be clarified.</p>	CR1	<input checked="" type="checkbox"/>
<b>A.3. Project participants</b>				
A.3.1. Is the form required for the indication of	1,2,3	<p>Yes, the form was correctly applied.</p>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
the project participants correctly applied?				
A.3.2. Is the participation of the listed entities or Parties confirmed by each one of them?	1,2,3	Both Noble Carbon Credits Limited and CAMCO International Limited are investment parties in this project and Anyang Iron and Steel Co., Ltd is the project owner.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.3.3. Is all information on participants / Parties provided consistent with the details provided by further chapters of the PDD (in particular annex 1)?	1,2,3	Yes, information of participants in this section is same with that from Annex 1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>A.4. Technical description of the project activity</b>				
<i>A.4.1. Location of the project activity</i>				
A.4.1.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	8	The project activity is located in Anyang Iron and Steel Co., Ltd which is at Yindu District, Anyang city, Henan Province, China.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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.)?	8, 10, 12, 31	The approval of feasibility study report and environmental impact assessment are available to audit team during site audit.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>A.4.2. Category(ies) of project activity</i>				
A.4.2.1. To which category(ies) does the project activity belonging to? Is the category correctly identified and indicated?	1,2,3	<b><u>Corrective Action Request 1:</u></b> The project comes under Sector Scope 1: Energy Industries and Sector Scope 4: Manufacturing Industries. Please correct it in PDD.	CAR1	<input checked="" type="checkbox"/>
<i>A.4.3. Technology to be employed by the project activity</i>				
A.4.3.1. Does the technical design of the project activity reflect current good practices?	1,2, 8, 10, 12, 31	The domestic technology of utilizing waste gas for electricity generation has been mature in China, therefore, according to project owner's plan, all equipments are developed and manufactured domestically.	CR2	<input checked="" type="checkbox"/>

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		<b>Clarification Request No. 2.</b> As shown in gas balance in FSR, 141,704Nm <sup>3</sup> /h waste gas in Section A.2 is came from blast furnace gas(also 13.4% of total BFG), please also include the amounts of converter gas and coke oven gas per hour in this section.		
A.4.3.2. Does the description of the technology to be applied provide sufficient and transparent input/ information to evaluate its impact on the greenhouse gas balance?	1,2, 8, 10, 12, 31	Yes, the project utilizes waste gas from iron and steel manufacturing process and generates electricity. That will substitute the electricity from grid mainly from coal fired plants. There is no doubt that project will reduce the GHG emissions.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.3.3. Does the implementation of the project activity require any technology transfer from annex-I-countries to the host country(ies)?	1,2, 8, 10, 12, 31	No, all equipments and technology involved in the project came from host country. There is no technology transfer from annex-I countries.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.3.4. Is the technology implemented by the project activity environmentally safe?	1,2, 8, 10, 12, 31	According to the approved EIA, the project will not create any adverse environment impacts. On the contrary, through displacing existing flaring with utilization of waste gas by the project, environment condition will be improved.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.3.5. Is the information provided in compliance with actual situation or planning?	1,2,3 8,9	Yes, information provided in PDD is in compliance with actual situation on site.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.3.6. Does the project use state of the art technology and / or does the technology result in a significantly better performance than any commonly used technologies in the host country?	1,2,3 8,9	Yes. Waste gas fired boiler and steam turbine-generator units were made in host Country by using the state of art technology.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.3.7. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1,2,3 8,9	No. it is foreseeable that technology employed currently will not be substituted within project lifetime.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.3.8. Does the project require extensive initial training and maintenance efforts in order to	1,2,3	Yes, training in operation and maintenance is required and also	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
be carried out as scheduled during the project period?	8,9	Planned by project owner.		
A.4.3.9. Is information available on the demand and requirements for training and maintenance?	1,2,3 8,9	Yes, documents indicated during site audit that required training has been implemented for different post in operation and maintenance.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.3.10. Is a schedule available for the implementation of the project and are there any risks for delays?	1,2,3 8,9	Because the location of Anyang Iron and Steel Group is close to Yinxu, an archaeological site, a study of archaeological is a must before construction. As related archaeological activity has been completed, risk of progress delay is low.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>A.4.4. Estimated amount of emission reductions over the chosen crediting period</b>				
A.4.4.1. Is the form required for the indication of projected emission reductions correctly applied?	1,2,3 8,9, 15	Yes. The form is correctly applied.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.4.2. Are the figures provided consistent with other data presented in the PDD?	1,2,3 8,9	Yes, figures in table are same with data in other chapter in PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>A.4.5. Public funding of the project activity</b>				
A.4.5.1. Is the information provided on public funding provided in compliance with the actual situation or planning as available by the project participants?	1,2,3 8,	According to investment records reviewed by DOE, there is no public funding necessary, all cost for 1 <sup>st</sup> generation unit are covered by equity capital from Anyang Iron and Steel Group. For rest units, loan from bank will be necessary share of total investment. Loan contracts of Agriculture of China and China Construction Bank have been countersigned and reviewed by auditor.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.5.2. Is all information provided consistent with the details given in remaining chapters of the PDD (in particular annex 2)?	1,2,3 8,9	Statement in Annex 2 is consistent with that in A4.5.2.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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B. Application of a baseline and monitoring methodology												
B.1. Title and reference of the approved baseline and monitoring methodology												
B.1.1 Are reference number, version number, and title of the baseline and monitoring methodology clearly indicated?	1,2,3 8,9	Yes, the latest version of ACM0012 (version 2) has been applied and the reference is clearly indicated.	☑	☑								
B.1.2. Is the applied version the most recent one and / or is this version still applicable?	1,2,3 8,9	Yes, the version 02 form EB 35 was employed in PDD.	☑	☑								
B.1.3. Does the methodology refer to the following tools with its latest approved versions? 1) Tool to calculate the emission factor for an electricity system. 2) Tool for the demonstration and assessment of additionality.	1,2,3 8,9	Yes. Versions for tools are version 1 and version 5 respectively.	☑	☑								
B.2. Justification of the choice of the methodology and why it is applicable to the project activity												
B.2.1 Is the applied methodology considered the most appropriate one?	1,2,3 8,9	Yes, the applicability conditions listed in methodology have been discussed below, conclusion shown that ACM0012 is the most appropriate methodology applied for this project	☑	☑								
B.2.2 Criterion 1: The applicability is limited to project activities that utilize waste gas and/or waste heat as an energy source for: - cogeneration or - generation of electricity or - direct use as process heat source or - for generation of heat in element processes (e. g. steam, hot water, hot oil, hot air)	1,2,3 8,9	<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>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	☑	☑
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											



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and that also use waste pressure: - to generate electricity.												
B.2.3. Criterion 2: Cogeneration of energy is from combined heat and power and not from combined cycle mode of electricity generation.	1,2,3 8,9	<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											
B.2.4. Criterion 3: Waste gas/heat/pressure is a by-product of machines and/or technical processes for which no useful application is found, which has not been used prior to and would not be used in absence of the CDM project activity.	1,2,3 8,9	<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											
B.2.5. Criterion 4: The project activity is use of waste pressure to generate electricity and the electricity generated using waste gas pressure should be measurable.	1,2,3 8,9	<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											
B.2.6. Criterion 5: The energy/electricity generated in the project activity - may be used within the industrial facility or - exported outside the industrial facility or - may be exported to the grid.	1,2,3 8,9	<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											

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B.2.7. Criterion 6: The energy in the project activity can be generated - by the owner of the industrial facility producing the waste gas/heat or - by a third party within the industrial facility.	1,2,3 8,9	<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											
B.2.8. Criterion 7: Before implementing the project activity no regulations constrained the industrial facility to generate waste gas from using fossil fuels.	1,2,3 8,9	<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											
B.2.9. Criterion 8: If capacity expansion of an existing facility is planned the added capacity must be treated as a new facility.	1,2,3 8,9	<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											
B.2.10. Criterion 9: Either one of the following proofs shall be given if the waste gas/pressure utilized in the project activity was flared or released into the atmosphere in absence of the project at an existing facility:  1. direct measurements of energy content and amount of the waste gas for at least 3 years prior to the start of the project activity or	1,2,3 8,9	<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											

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2. energy balance of relevant sections of the plant to indicate that the waste gas/heat was not a source of energy before the implementation of the project activity or 3. energy bills to demonstrate that all the energy required for the process has been procured commercially 4. significant manufacturer's documents from the construction of the facility for estimating quantity and energy content of waste gas/heat produced for rated plant capacity/per unit of product produced 5.onsite check by the DOE that no equipment for waste gas recovery and use has been installed prior to the implementation of the project activity.												
B.2.11. Criterion 10: The credits are claimed by the generator of energy using waste gas/heat/pressure in consideration of: 1. energy exported to other facilities (recipients) which shall not claim the emission reductions for using a zero-emission energy source or 2. facilities and recipients included in the project boundary generated energy on site prior to implementation of the project activity which can claim credits for the remaining lifetime of equipments currently used and credit period.	1,2,3 8,9	<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											

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B.3. Description of the sources and gases included in the project boundary														
B.3.1. Source: electricity generation, grid or captive source Description of Source: main emission Gas(es): CO <sub>2</sub> Type: Baseline Emissions	1,2,3 8,9	<table><tr><td>Boundary checklist</td><td>Yes / No</td></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>	Boundary checklist	Yes / No	Source and gas(es) discussed in the PDD?	Yes	Inclusion / exclusion justified?	Yes	Explanation / Justification sufficient?	Yes	Consistency with monitoring plan?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Boundary checklist	Yes / No													
Source and gas(es) discussed in the PDD?	Yes													
Inclusion / exclusion justified?	Yes													
Explanation / Justification sufficient?	Yes													
Consistency with monitoring plan?	Yes													
B.3.2. Source: fossil fuel consumption in boiler for thermal energy Description of Source: main emission Gas(es): CO <sub>2</sub> Type: Baseline Emissions	1,2,3 8,9	<table><tr><td>Boundary checklist</td><td>Yes / No</td></tr><tr><td>Source and gas(es) discussed in the PDD?</td><td>No</td></tr><tr><td>Inclusion / exclusion justified?</td><td>No</td></tr><tr><td>Explanation / Justification sufficient?</td><td>No</td></tr><tr><td>Consistency with monitoring plan?</td><td>No</td></tr></table> <p><b>Clarification Request No. 3.</b> Please include summary of gases and sources and justify them respectively.</p>	Boundary checklist	Yes / No	Source and gas(es) discussed in the PDD?	No	Inclusion / exclusion justified?	No	Explanation / Justification sufficient?	No	Consistency with monitoring plan?	No	CR3	<input checked="" type="checkbox"/>
Boundary checklist	Yes / No													
Source and gas(es) discussed in the PDD?	No													
Inclusion / exclusion justified?	No													
Explanation / Justification sufficient?	No													
Consistency with monitoring plan?	No													
B.3.3. Source: fossil fuel consumption in co-generation plant Description of Source: main emission Gas(es): CO <sub>2</sub> Type: Baseline Emissions	1,2,3 8,9	<table><tr><td>Boundary checklist</td><td>Yes / No</td></tr><tr><td>Source and gas(es) discussed in the PDD?</td><td>No</td></tr><tr><td>Inclusion / exclusion justified?</td><td>No</td></tr><tr><td>Explanation / Justification sufficient?</td><td>No</td></tr><tr><td>Consistency with monitoring plan?</td><td>No</td></tr></table> <p>See B.3.2</p>	Boundary checklist	Yes / No	Source and gas(es) discussed in the PDD?	No	Inclusion / exclusion justified?	No	Explanation / Justification sufficient?	No	Consistency with monitoring plan?	No	CR3	<input checked="" type="checkbox"/>
Boundary checklist	Yes / No													
Source and gas(es) discussed in the PDD?	No													
Inclusion / exclusion justified?	No													
Explanation / Justification sufficient?	No													
Consistency with monitoring plan?	No													
B.3.4. Source: emissions from generation of steam used in the flaring process Description of Source: main emission	1,2,3 8,9	<table><tr><td>Boundary checklist</td><td>Yes / No</td></tr></table>	Boundary checklist	Yes / No	CR3	<input checked="" type="checkbox"/>								
Boundary checklist	Yes / No													

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Gas(es): CO2 Type: Baseline Emissions		Source and gas(es) discussed in the PDD?	No		
		Inclusion / exclusion justified?	No		
		Explanation / Justification sufficient?	No		
		Consistency with monitoring plan?	No		
		See B.3.2			
B.3.5. Source: supplemental fossil fuel consumption at the project plant Description of Source: main emission Gas(es): CO2 Type: Project Emissions	1,2,3 8,9	Boundary checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Source and gas(es) discussed in the PDD?	Yes		
		Inclusion / exclusion justified?	Yes		
		Explanation / Justification sufficient?	Yes		
		Consistency with monitoring plan?	Yes		
B.3.6. Source: supplemental electricity consumption Description of Source: main emission Gas(es): CO2 Type: Project Emissions	1,2,3 8,9	Boundary checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Source and gas(es) discussed in the PDD?	Yes		
		Inclusion / exclusion justified?	Yes		
		Explanation / Justification sufficient?	Yes		
		Consistency with monitoring plan?	Yes		
B.3.7. Source: emissions from cleaning of gas Description of Source: only in case waste gas cleaning is required and leads to emissions related to the energy requirement of the cleaning Gas(es): CO2 Type: Project Emissions	1,2,3 8,9	Boundary checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Source and gas(es) discussed in the PDD?	Yes		
		Inclusion / exclusion justified?	Yes		
		Explanation / Justification sufficient?	Yes		
		Consistency with monitoring plan?	Yes		

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B.3.8. Do the spatial and technological boundaries as verified on-site comply with the discussion provided by / indication included to the PDD?	1,2,3 8,9	Yes, it shows in PDD that power system of the project will connect to grid which belongs to Central China Power Grid, it complies with site situation.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>								
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 to the project activity been identified and discussed by the PDD? Why can this list be considered as being complete (Step 1)?	1,2,3 8,9	<div>Baseline options and combinations which should be considered:</div> <table><tr><th>Defined and discussed in PDD?</th><th>Yes / No</th></tr><tr><td>industrial facility where waste gas/heat/pressure is generated</td><td>Yes</td></tr><tr><td>facility where the energy is produced</td><td>Yes</td></tr><tr><td>facility where the energy is consumed</td><td>Yes</td></tr></table>	Defined and discussed in PDD?	Yes / No	industrial facility where waste gas/heat/pressure is generated	Yes	facility where the energy is produced	Yes	facility where the energy is consumed	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Defined and discussed in PDD?	Yes / No											
industrial facility where waste gas/heat/pressure is generated	Yes											
facility where the energy is produced	Yes											
facility where the energy is consumed	Yes											
B.4.2. Does the project identify correctly and exclude those options not in line with regulatory or legal requirements?	1,2,3 8,9	Yes, the options incompliance with regulatory requirements were excluded from the list.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>								
B.4.3. Have applicable regulatory or legal requirements been identified?	1,2,3 8,9	Yes, it is Notice on strictly prohibiting the installation of fossil fuel fired generators with capacity of 135MW or below which was issued by general office of state council. Direct venting waste gas without incineration was also prohibited by Gas Security Regulations for Industrial Enterprises GB6222-2005.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>								
B.4.4. Does the project participants exclude baseline options that depend on fuels (used for generating heat and/or power), that are not available at the project site?	1,2,3 8,9	Yes, it was excluded.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>								

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B.4.5. Have all realistic and credible alternatives been discussed for the use of waste gas and the exclusion of options justified (Step 1, W1 – 4)?	1,2,3 8,9	Alternative(s) may include, inter alia: <table><tr><th colspan="2">Categories</th><th>Yes / No</th></tr><tr><td>W1</td><td>Waste gas is directly vented to atmosphere without incineration;</td><td>N/A</td></tr><tr><td>W2</td><td>Waste gas is released to the atmosphere after incineration or waste heat is released to the atmosphere (waste pressure energy is not utilized);</td><td>Yes</td></tr><tr><td>W3</td><td>Waste gas/heat is sold as an energy source;</td><td>N/A</td></tr><tr><td>W4</td><td>Waste gas/heat/pressure is used for meeting energy demand.</td><td>Yes</td></tr></table>		Categories		Yes / No	W1	Waste gas is directly vented to atmosphere without incineration;	N/A	W2	Waste gas is released to the atmosphere after incineration or waste heat is released to the atmosphere (waste pressure energy is not utilized);	Yes	W3	Waste gas/heat is sold as an energy source;	N/A	W4	Waste gas/heat/pressure is used for meeting energy demand.	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Categories		Yes / No																		
W1	Waste gas is directly vented to atmosphere without incineration;	N/A																		
W2	Waste gas is released to the atmosphere after incineration or waste heat is released to the atmosphere (waste pressure energy is not utilized);	Yes																		
W3	Waste gas/heat is sold as an energy source;	N/A																		
W4	Waste gas/heat/pressure is used for meeting energy demand.	Yes																		
B.4.6. Have all realistic and credible alternatives been discussed for power generation and the exclusion of options justified (Step 1, P1 – 8)?	1,2,3 8,9	Alternative(s) may include, inter alia: <table><tr><th colspan="2">Categories</th><th>Yes / No</th></tr><tr><td>P1</td><td>Proposed project activity not undertaken as a CDM project activity;</td><td>Yes</td></tr><tr><td>P2</td><td>On-site or off-site existing/new fossil fuel fired cogeneration plant;</td><td>N/A</td></tr><tr><td>P3</td><td>On-site or off-site existing/new renewable energy based cogeneration plant;</td><td>N/A</td></tr><tr><td>P4</td><td>On-site or off-site existing/new fossil fuel based existing captive or identified</td><td>N/A</td></tr></table>		Categories		Yes / No	P1	Proposed project activity not undertaken as a CDM project activity;	Yes	P2	On-site or off-site existing/new fossil fuel fired cogeneration plant;	N/A	P3	On-site or off-site existing/new renewable energy based cogeneration plant;	N/A	P4	On-site or off-site existing/new fossil fuel based existing captive or identified	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Categories		Yes / No																		
P1	Proposed project activity not undertaken as a CDM project activity;	Yes																		
P2	On-site or off-site existing/new fossil fuel fired cogeneration plant;	N/A																		
P3	On-site or off-site existing/new renewable energy based cogeneration plant;	N/A																		
P4	On-site or off-site existing/new fossil fuel based existing captive or identified	N/A																		

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			plant;			
		P5	On-site or off-site existing/new renewable energy based existing captive or identified plant;	N/A		
		P6	Sourced Grid-connected power plants;	Yes		
		P7	Captive Electricity generation from waste gas (if project activity is captive generation with waste gas, this scenario represents captive generation with lower efficiency than the project activity.)	N/A		
		P8	Cogeneration from waste gas (if project activity is cogeneration with waste gas, this scenario represents cogeneration with lower efficiency than the project activity).	N/A		
B.4.7. Have all realistic and credible alternatives been discussed for heat generation and the exclusion of options justified (Step 1, H1 – 9)?	1,2,3 8,9	Alternative(s) may include, inter alia:			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Categories		Yes / No		
		H1	Proposed project activity not undertaken as a CDM project activity;	N/A		
		H2	On-site or off-site existing/new fossil fuel based cogeneration plant;	N/A		



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		H3	On-site or off-site existing /new renewable energy based cogeneration plant;	N/A		
		H4	An existing or new fossil fuel based boilers;	N/A		
		H5	An existing or new renewable energy based boilers;	N/A		
		H6	Any other source such as district heat;	N/A		
		H7	Other heat generation technologies (e.g. heat pumps or solar energy);	N/A		
		H8	Steam/ Process heat generation from waste gas, but with lower efficiency;	N/A		
		H9	Cogeneration from waste gas, but with lower efficiency.	N/A		
B.4.8. Has a baseline scenario matrix been developed?	1,2,3 8,9	Yes, it includes baseline options as W2/P6 and W4/P1.			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.9. Has the fuel been identified and justified which were used in the baseline scenario (Step 2)?	1,2,3 8,9	No, no fuel was used in the baseline scenario.			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.10. Has the latest approved version of the "Tool for the demonstration and assessment of additionality" been used to eliminate non feasible baseline options (Step 3)?	1,2,3 8,9	Yes, it was detailed in Section B.5, and scenario 2 identified above as W4/P1 was eliminate due to less economical attractiveness.			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.11. Is it demonstrated that the option with the lowest baseline emissions is considered as the most likely baseline scenario, if more	1,2,3 8,9	Only one scenario was left after discussion and it is W2+P6. That is waste gas will continue to flare and release into atmosphere and grid will provide electricity to the plant.			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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than one feasible alternative remain (Step 4)?																																													
B.4.12. Follows the identified baseline scenario one of the two project scenarios resulting from combinations of baseline options and scenarios applicable to ACM0012?	1,2,3 8,9	<div>Applicability criteria of ACM0012:</div> <table><tr><th colspan="5">Project Scenario: Cogeneration of energy</th></tr><tr><th rowspan="2">Scenario</th><th colspan="3">Baseline options</th><th rowspan="2">Yes / No</th></tr><tr><th>Waste gas</th><th>Power</th><th>Heat</th></tr><tr><td>1</td><td>W2</td><td>P4 or P6</td><td>H4</td><td>N/A</td></tr><tr><td>2</td><td>W2</td><td>P2</td><td>H2</td><td>N/A</td></tr><tr><th colspan="5">Project Scenario: Generation of Electricity or Heat only</th></tr><tr><th rowspan="2">Scenario</th><th colspan="3">Baseline options</th><th rowspan="2">Yes / No</th></tr><tr><th>Waste gas</th><th colspan="2">Power/Heat</th></tr><tr><td>1</td><td>W2</td><td colspan="2">P4 or P6/H4</td><td>Yes</td></tr></table> <div>Baseline scenario is W2+ P6.</div>	Project Scenario: Cogeneration of energy					Scenario	Baseline options			Yes / No	Waste gas	Power	Heat	1	W2	P4 or P6	H4	N/A	2	W2	P2	H2	N/A	Project Scenario: Generation of Electricity or Heat only					Scenario	Baseline options			Yes / No	Waste gas	Power/Heat		1	W2	P4 or P6/H4		Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Project Scenario: Cogeneration of energy																																													
Scenario	Baseline options			Yes / No																																									
	Waste gas	Power	Heat																																										
1	W2	P4 or P6	H4	N/A																																									
2	W2	P2	H2	N/A																																									
Project Scenario: Generation of Electricity or Heat only																																													
Scenario	Baseline options			Yes / No																																									
	Waste gas	Power/Heat																																											
1	W2	P4 or P6/H4		Yes																																									
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. Has CDM been considered before the starting date of the project activity and which evidence has been delivered?	1,2,3, 4,8, 30-33, 43-47	<div>Clarification Request No. 4.</div> <div>Please include timetable in which progress of project implementation is clearly indicated.</div> <div>Please include timetable in which CDM events or actions are included.</div> <div>Please also provide evidence documents to support the timetables mentioned above.</div>	CR4	<input checked="" type="checkbox"/>																																									

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B.5.2. In case of applying step 2 / investment analysis of the additionality tool: Is the analysis method identified appropriately (step 2a)?	1,2,3, 4,8, 30-33, 43-47	Yes, benchmark analysis (option III) was selected. <b><u>Corrective Action Request 2:</u></b> Sub-step 1 b-typo error: "W4/P1 and W4/P6" should be W4/P1 and W2/P6, please correct it.	CAR2	<input checked="" type="checkbox"/>
B.5.3. In case of Option I (simple cost analysis): Is it demonstrated that the activity produces no economic benefits other than CDM income?	1,2,3, 4,8, 30-33, 43-47	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.4. In case of Option II (investment comparison analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?	1,2,3, 4,8, 30-33, 43-47	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.5. In case of Option III (benchmark analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?	1,2,3, 4,8, 30-33, 43-47	Yes, equity IRR(after tax) was chosen as financial indicator for analysis.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.6. In case of Option II or Option III: Is the calculation of financial figures for this indicator correctly done for all alternatives and the project activity?	1,2,3, 4,8, 30-33, 43-47	IRR was calculated only for proposed project.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.7. In case of Option II or Option III: Is the analysis presented in a transparent manner including publicly available proofs for the utilized data?	1,2,3, 4,8, 30-33, 43-47	Yes, document "method and parameters for economic assessment of construction project" (ver 3) was available for analysis and site audit. The input data in table 1 need be clarified as below <b><u>Clarification Request No. 5.</u></b> 1. Please provide evidence document for annual O&M cost calculation.	CR5	<input checked="" type="checkbox"/>

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B.5.8. In case of applying step 3 (barrier analysis) of the additionality tool: Is a complete list of barriers developed that prevent the different alternatives to occur?	1,2,3, 4,8, 30-33, 43-47	It was omitted in PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.9. In case of applying step 3 (barrier analysis): Is transparent and documented evidence provided on the existence and significance of these barriers?	1,2,3, 4,8, 30-33, 43-47	See B5.8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.10. In case of applying step 3 (barrier analysis): Is it transparently shown that the execution of at least one of the alternatives is not prevented by the identified barriers?	1,2,3, 4,8, 30-33, 43-47	See B5.8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.11. 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)?	1,2,3, 4,8, 30-33, 43-47	Yes, similar activities within Central China Power Grid were appropriately analyzed in this section,	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.12. If similar activities are occurring: Is it demonstrated that in spite of these similarities the project activity would not be implemented without the CDM component (step 4b)?	1,2,3, 4,8, 30-33, 43-47	Yes, it was concluded that the project's implementation face prohibitive barriers without CDM component.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B.6. Emissions reductions</b>				
<b>B.6.1. Explanation of methodological choices</b>				
B.6.1.1. Is it explained how the procedures provided in the methodology are applied by the proposed project activity?	1,2,3,4, 8, 15-17	The calculation of the emission reduction is applied according to the steps described in ACM0012. Tool to calculate the emission factor for an electricity system was also applied to calculate emission factor of Central China Power Grid.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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B.6.1.2. Is every selection of options offered by the methodology correctly justified and is this justification in line with the situation verified on-site?	1,2,3,4 ,8, 15-17	Yes, justification has been fully discussed and demonstrated in PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.6.1.3. Are the formulae required for the determination of <b>baseline</b> emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1,2,3,4 ,8, 15-17	<b>Corrective Action Request 3:</b> Page 25, paragraph above EF formulae: As PDD applied fixed credit period as 10 years, first/second/third period and Wom=0.25 and Wbm=0.75 as well mentioned here should be corrected.	CAR3	<input checked="" type="checkbox"/>
B.6.1.4. If the scenario 1, sub-section a is chosen to calculate the baseline emissions and the electricity generated by the project activity is less than 60 GWh/year: Are the six steps as defined in the “tool for calculation of emission factor for electricity systems” correctly applied and described in the PDD?	1,2,3,4 ,8, 15-17	See B6.1.3 CAR 3.	CAR3	<input checked="" type="checkbox"/>
B.6.1.5. Are the formulae required for the determination of <b>project</b> emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1,2,3,4 ,8, 15-17	As shown in PDD, project emission equals to zero due to no auxiliary fuel combustion and electricity consumption for gas cleaning equipment has been included in auxiliary electricity consumption which is calculated in baseline emission.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.6.1.6. If electricity is purchased from the grid, and the CO <sub>2</sub> emission factor for electricity is determined as the combined margin emission factor according to the “tool to calculate the emission factor for an electricity system”: Are the six steps as defined in this tool correctly	1,2,3,4 ,8, 15-17	Yes, 6 steps defined in Tool have been applied in emission factor calculation of Central China Power Grid.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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applied and described in the PDD?																						
B.6.1.7. Are the formulae required for the determination of <b>emission reductions</b> correctly presented?	1,2,3,4 , 8, 15-17	Yes. The formula is correctly presented in chapter B.6.1. As project emission and leakage equal to zero after discussion, the emission reduction of the project equals to baseline emission in conclusion.	☑	☑																		
B.6.2. <i>Data and parameters that are available at validation:</i> <i>The calculation of baseline emissions (<math>BE_{En,v}</math>) depends on the identified baseline scenario.</i> <i>Scenario 1 represents the situation where the electricity is obtained from a specific existing power plant or from the grid and heat from a fossil fuel based element process.</i> <i>Scenario 2 represents the situation where the recipient plant(s) obtain electricity and/or heat generated by a fossil fuel based existing/new cogeneration plant.</i>																						
B.6.2.1. Is the list of parameters presented in chapter B.6.2 considered to be complete with regard to the requirements of the applied methodology?	1,2,3,4 ,8, 15-17	<b>Corrective Action Request 4:</b> The parameters listed below were not completed in B6.2.	CAR4	☑																		
Integrate the required amount of sub-checklists for monitoring parameter and <b>comment</b> on any line answered with “No”.																						
B.6.2.2. Parameter Title: $f_{wg}$ fraction of total electricity generated by the project activity using waste gas	1,2,3,4 ,8, 15-17	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>No</td></tr><tr><td>Appropriate description of parameter?</td><td>No</td></tr><tr><td>Source clearly referenced?</td><td>No</td></tr><tr><td>Correct value provided?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Choice of data correctly justified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>No</td></tr></table>	Data Checklist	Yes / No	Title in line with methodology?	No	Data unit correctly expressed?	No	Appropriate description of parameter?	No	Source clearly referenced?	No	Correct value provided?	No	Has this value been verified?	No	Choice of data correctly justified?	No	Measurement method correctly described?	No	☑	☑
Data Checklist	Yes / No																					
Title in line with methodology?	No																					
Data unit correctly expressed?	No																					
Appropriate description of parameter?	No																					
Source clearly referenced?	No																					
Correct value provided?	No																					
Has this value been verified?	No																					
Choice of data correctly justified?	No																					
Measurement method correctly described?	No																					
B.6.2.3. Parameter Title: $f_{cap}$	1,2,3,4		☑	☑																		

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fraction of total energy produced using waste gas	,8, 15-17	Data Checklist	Yes / No		
		Title in line with methodology?	No		
		Data unit correctly expressed?	No		
		Appropriate description of parameter?	No		
		Source clearly referenced?	No		
		Correct value provided?	No		
		Has this value been verified?	No		
		Choice of data correctly justified?	No		
		Measurement method correctly described?	No		
B.6.2.4. Parameter Title: $n_{\text{Plant}, j}$ overall efficiency of the existing plant that would be used by recipient	1,2,3,4 ,8, 15-17	Data Checklist	Yes / No	☑	☑
		Title in line with methodology?	N/A		
		Data unit correctly expressed?	N/A		
		Appropriate description of parameter?	N/A		
		Source clearly referenced?	N/A		
		Correct value provided?	N/A		
		Has this value been verified?	N/A		
		Choice of data correctly justified?	N/A		
		Measurement method correctly described?	N/A		
B.6.2.5. Parameter Title: $f_{\text{WG}}$ fraction of total heat generated by the project activity electricity using waste gas	1,2,3,4 ,8, 15-17	Data Checklist	Yes / No	☑	☑
		Title in line with methodology?	N/A		
		Data unit correctly expressed?	N/A		
		Appropriate description of parameter?	N/A		
		Source clearly referenced?	N/A		
		Correct value provided?	N/A		

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		Has this value been verified?	N/A																				
		Choice of data correctly justified?	N/A																				
		Measurement method correctly described?	N/A																				
B.6.2.6. Parameter Title: $n_{EP, I, j}$ efficiency of the element process that would have been supplied heat to the recipient	1,2,3,4 ,8, 15-17	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table>		Data Checklist	Yes / No	Title in line with methodology?	N/A	Data unit correctly expressed?	N/A	Appropriate description of parameter?	N/A	Source clearly referenced?	N/A	Correct value provided?	N/A	Has this value been verified?	N/A	Choice of data correctly justified?	N/A	Measurement method correctly described?	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Data Checklist	Yes / No																						
Title in line with methodology?	N/A																						
Data unit correctly expressed?	N/A																						
Appropriate description of parameter?	N/A																						
Source clearly referenced?	N/A																						
Correct value provided?	N/A																						
Has this value been verified?	N/A																						
Choice of data correctly justified?	N/A																						
Measurement method correctly described?	N/A																						
B.6.2.7. Parameter Title: $n_{Cogen}$ efficiency of cogeneration plant using fossil fuel	1,2,3,4 ,8, 15-17	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table>		Data Checklist	Yes / No	Title in line with methodology?	N/A	Data unit correctly expressed?	N/A	Appropriate description of parameter?	N/A	Source clearly referenced?	N/A	Correct value provided?	N/A	Has this value been verified?	N/A	Choice of data correctly justified?	N/A	Measurement method correctly described?	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Data Checklist	Yes / No																						
Title in line with methodology?	N/A																						
Data unit correctly expressed?	N/A																						
Appropriate description of parameter?	N/A																						
Source clearly referenced?	N/A																						
Correct value provided?	N/A																						
Has this value been verified?	N/A																						
Choice of data correctly justified?	N/A																						
Measurement method correctly described?	N/A																						
B.6.2.8. Parameter Title: $Q_{WG, y}$ quantity of waste gas used for energy generation	1,2,3,4 ,8, 15-			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																		



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during year	17	<table><tr><td>Data Checklist</td><td>Yes / No</td></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table>	Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	Yes	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes			
Data Checklist	Yes / No																						
Title in line with methodology?	Yes																						
Data unit correctly expressed?	Yes																						
Appropriate description of parameter?	Yes																						
Source clearly referenced?	Yes																						
Correct value provided?	Yes																						
Has this value been verified?	Yes																						
Choice of data correctly justified?	Yes																						
Measurement method correctly described?	Yes																						
B.6.2.9. Parameter Title: $n_{Boiler, fl}$ efficiency of the boiler that would have been used to generate the steam	1,2,3,4 ,8, 15-17	<table><tr><td>Data Checklist</td><td>Yes / No</td></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table>	Data Checklist	Yes / No	Title in line with methodology?	N/A	Data unit correctly expressed?	N/A	Appropriate description of parameter?	N/A	Source clearly referenced?	N/A	Correct value provided?	N/A	Has this value been verified?	N/A	Choice of data correctly justified?	N/A	Measurement method correctly described?	N/A		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Data Checklist	Yes / No																						
Title in line with methodology?	N/A																						
Data unit correctly expressed?	N/A																						
Appropriate description of parameter?	N/A																						
Source clearly referenced?	N/A																						
Correct value provided?	N/A																						
Has this value been verified?	N/A																						
Choice of data correctly justified?	N/A																						
Measurement method correctly described?	N/A																						
B.6.2.10. Parameter Title: $Q_{WG, FI, B}$ amount of waste gas flared using steam prior to the implementation of the project activity	1,2,3,4 ,8, 15-17	<table><tr><td>Data Checklist</td><td>Yes / No</td></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr></table>	Data Checklist	Yes / No	Title in line with methodology?	N/A	Data unit correctly expressed?	N/A	Appropriate description of parameter?	N/A	Source clearly referenced?	N/A	Correct value provided?	N/A		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
Data Checklist	Yes / No																						
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		Has this value been verified?	N/A																				
		Choice of data correctly justified?	N/A																				
		Measurement method correctly described?	N/A																				
B.6.2.11. Parameter Title: <b>Q<sub>st, fl, B</sub></b> steam used to flare the waste gas prior to the implementation of the project activity	1,2,3,4 ,8, 15-17	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table>		Data Checklist	Yes / No	Title in line with methodology?	N/A	Data unit correctly expressed?	N/A	Appropriate description of parameter?	N/A	Source clearly referenced?	N/A	Correct value provided?	N/A	Has this value been verified?	N/A	Choice of data correctly justified?	N/A	Measurement method correctly described?	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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Has this value been verified?	N/A																						
Choice of data correctly justified?	N/A																						
Measurement method correctly described?	N/A																						
B.6.2.12. Parameter Title: <b>NCV<sub>i</sub></b> net calorific value annual average for each consumed fuel and the waste gas/heat	1,2,3,4 ,8, 15-17	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table>		Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	Yes	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Data Checklist	Yes / No																						
Title in line with methodology?	Yes																						
Data unit correctly expressed?	Yes																						
Appropriate description of parameter?	Yes																						
Source clearly referenced?	Yes																						
Correct value provided?	Yes																						
Has this value been verified?	Yes																						
Choice of data correctly justified?	Yes																						
Measurement method correctly described?	Yes																						
B.6.2.13. Parameter Title: <b>Q<sub>WG, BL</sub></b> quantity of waste gas generated prior to the start	1,2,3,4 ,8, 15-			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																		

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of the project activity	17	<table><tr><td>Data Checklist</td><td>Yes / No</td></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table>	Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	Yes	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes			
Data Checklist	Yes / No																						
Title in line with methodology?	Yes																						
Data unit correctly expressed?	Yes																						
Appropriate description of parameter?	Yes																						
Source clearly referenced?	Yes																						
Correct value provided?	Yes																						
Has this value been verified?	Yes																						
Choice of data correctly justified?	Yes																						
Measurement method correctly described?	Yes																						
B.6.2.14. Parameter Title: $Q_{BL, product}$ production by process that most logically relates to waste gas generation in baseline	1,2,3,4,8, 15-17	<table><tr><td>Data Checklist</td><td>Yes / No</td></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table> It is included in B7.1	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		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Data Checklist	Yes / No																						
Title in line with methodology?	Yes																						
Data unit correctly expressed?	Yes																						
Appropriate description of parameter?	Yes																						
Source clearly referenced?	Yes																						
Correct value provided?	Yes																						
Has this value been verified?	Yes																						
Choice of data correctly justified?	Yes																						
Measurement method correctly described?	Yes																						
B.6.2.15. Parameter Title: $q_{wg, product}$ amount of waste gas/heat/pressure the industrial facility generates per unit of product generated by the process that generates waste gas/heat/pressure	1,2,3,4,8, 15-17	<table><tr><td>Data Checklist</td><td>Yes / No</td></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr></table>	Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
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																						

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		Has this value been verified?	Yes		
		Choice of data correctly justified?	Yes		
		Measurement method correctly described?	Yes		
		It is included in B7.1			

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B.6.2.16. Parameter Title: Annual electricity supplied to the grid prior to retrofit (applicable only for retrofit and modification activities)	1,2,3,4 ,8, 15-17		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Data Checklist		
		Title in line with methodology?		
		Data unit correctly expressed?		
		Appropriate description of parameter?		
		Source clearly referenced?		
		Correct value provided?		
		Has this value been verified?		
		Choice of data correctly justified?		
		Measurement method correctly described?		
B.6.2.17. Parameter Title: Emission factor of the grid (CM)	1,2,3,4 ,8, 15-17		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Data Checklist		
		Title in line with methodology?		
		Data unit correctly expressed?		
		Appropriate description of parameter?		
		Source clearly referenced?		
		Correct value provided?		
		Has this value been verified?		
		Choice of data correctly justified?		
		Measurement method correctly described?		

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B.6.2.18. Parameter Title: Operating margin (OM) emission factor of the grid	1,2,3,4 ,8, 15-17		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Data Checklist		
		Title in line with methodology?		
		Data unit correctly expressed?		
		Appropriate description?		
		Source clearly referenced?		
		Correct value provided?		
		Has this value been verified?		
		Choice of data correctly justified?		
		Measurement method correctly described?		
B.6.2.19. Parameter Title: Build margin (BM) emission factor of the grid	1,2,3,4 ,8, 15-17	it is calculated.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Data Checklist		
		Title in line with methodology?		
		Data unit correctly expressed?		
		Appropriate description of parameter?		
		Source clearly referenced?		
		Correct value provided?		
		Has this value been verified?		
		Choice of data correctly justified?		
		Measurement method correctly described?		

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		It is calculated.			
B.6.2.20. Parameter Title: fuel consumption of each power source	1,2,3,4 ,8, 15- 17	Data Checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		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.6.2.21. Parameter Title: emission coefficient of each fuel	1,2,3,4 ,8, 15- 17	Data Checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		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		

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		It is derived from IPCC values.			
B.6.2.22. Parameter Title: electricity generation of each power source	1,2,3,4 ,8, 15-17	Data Checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		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.6.2.23. Parameter Title: fraction of time with low costs /must run plant at the margin (for simple adjusted OM only)	1,2,3,4 ,8, 15-17	Data Checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Title in line with methodology?	N/A		
		Data unit correctly expressed?	N/A		
		Appropriate description of parameter?	N/A		
		Source clearly referenced?	N/A		
		Correct value provided?	N/A		
		Has this value been verified?	N/A		
		Choice of data correctly justified?	N/A		
		Measurement method correctly described?	N/A		



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B.6.2.24. Parameter Title: electricity imports	1,2,3,4 ,8, 15-17	Data Checklist	Yes / No		☑	☑
		Title in line with methodology?	N/A			
		Data unit correctly expressed?	N/A			
		Appropriate description of parameter?	N/A			
		Source clearly referenced?	N/A			
		Correct value provided?	N/A			
		Has this value been verified?	N/A			
		Choice of data correctly justified?	N/A			
		Measurement method correctly described?	N/A			
B.6.2.25. Parameter Title: CO <sub>2</sub> emission coefficient of fuels used in connected grids	1,2,3,4 ,8, 15-17	Data Checklist	Yes / No		☑	☑
		Title in line with methodology?	Yes			
		Data unit correctly expressed?	Yes			
		Appropriate description of parameter?	Yes			
		Source clearly referenced?	Yes			
		Correct value provided?	Yes			
		Has this value been verified?	Yes			
		Choice of data correctly justified?	Yes			
		Measurement method correctly described?	Yes			
B.6.3. Ex-ante calculation of emission reductions						
B.6.3.1. Is the projection based on the same proce-	1,2,3	Yes, as baseline scenario is receiving electricity from grid, and ex-			☑	☑

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dures as used for future monitoring?	,4	ante approach is chosen in credit period. Annual emission reduction equals to the product of electricity delivered by project activity annually and emission factor of grid.								
B.6.3.2. Are the GHG calculations documented in a complete and transparent manner?	1,2,3 ,4	Please refer to CR1. CER calculation spreadsheet need be provided to DOE.	CR1	☑						
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 ,4	<b>Clarification Request No. 6.</b> Net electricity delivered by project activity is 280.5GWh/a, but in table 1 and in IRR spreadsheet, the value is 280.14 GWh/a Please clarify which value is most suitable one and re-calculate the baseline emission if necessary.	CR6	☑						
B.6.3.4. Has the equation for calculating baseline emissions from electricity that is displaced by the project activity been used if project activity is use of waste pressure to generate electricity?	1,2,3 ,4	Not applicable.	☑	☑						
B.6.3.5. Does the parameter of efficiency ( $n_{BL}$ ) follow one of the stated demands?	1,2,3 ,4	<table><tr><th>Demand</th><th>Yes/No</th></tr><tr><td>i) Assume a constant efficiency of the <b>captive plant / element process / cogeneration plant</b> and determine the efficiency, as a conservative approach, for optimal operation conditions i.e. design fuel, designed steam extraction, optimal load, optimal oxygen content in flue gases, adequate fuel conditioning (temperature, viscosity, moisture, size/mesh etc), representative or favourable ambient conditions (temperature and humidity); or</td><td>N/A</td></tr><tr><td>ii) Highest of the efficiency values provided by two or</td><td>N/A</td></tr></table>	Demand	Yes/No	i) Assume a constant efficiency of the <b>captive plant / element process / cogeneration plant</b> and determine the efficiency, as a conservative approach, for optimal operation conditions i.e. design fuel, designed steam extraction, optimal load, optimal oxygen content in flue gases, adequate fuel conditioning (temperature, viscosity, moisture, size/mesh etc), representative or favourable ambient conditions (temperature and humidity); or	N/A	ii) Highest of the efficiency values provided by two or	N/A	☑	☑
Demand	Yes/No									
i) Assume a constant efficiency of the <b>captive plant / element process / cogeneration plant</b> and determine the efficiency, as a conservative approach, for optimal operation conditions i.e. design fuel, designed steam extraction, optimal load, optimal oxygen content in flue gases, adequate fuel conditioning (temperature, viscosity, moisture, size/mesh etc), representative or favourable ambient conditions (temperature and humidity); or	N/A									
ii) Highest of the efficiency values provided by two or	N/A									

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		more manufacturers for <b>power plants / element process</b> with specifications similar to that that would have been required to supply the recipient with electricity / heat / that it receives from the project activity; or Highest of the efficiency values provided by two or more manufacturers for <b>similar plants</b> , as used in the project activity; or			
		iii) Assume a captive power generation efficiency of 60% based on the net calorific values as a conservative approach ( <b>power plant</b> ); or Maximum efficiency of 100% ( <b>element process</b> ); or Maximum efficiency of 90%, based on net calorific values (irrespective of type of cogeneration system and type of heat generated) ( <b>cogeneration plant</b> ); or	N/A		
		iv) Estimated from load v/s efficiency curve(s) established for <b>equipment(s) / each element process</b> through measurement and described in Annex I; or Estimated from load v/s efficiency curve(s) established through measurement of the <b>cogeneration plants</b> and described in Annex I. Follow international standards for estimation of efficiency of power plants / individual element process / cogeneration plants.	N/A		

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B.6.3.6. Are the baseline emissions capped following one of the two methods described in the methodology (ACM0012)? Which method has been applied?	1,2,3 ,4	Yes, method 1 was applied to assess the parameter.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.6.3.7. Is the calculation of the operating, build and combined margin emission factors documented electronically in a spreadsheet with the relevant information as defined per the "Tool for calculation of emission factor for electrical systems"? Has this spreadsheet been submitted to the validation team?	1,2,3 ,4	It is included in Annex 3.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B.6.4. Summary of the ex-ante estimation of emission reductions</b>				
B.6.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	1,2,3 ,4	Yes, emission reduction from project equal to baseline emission after calculation.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.6.4.2. Is the form/table required for the indication of projected emission reductions correctly applied?	1,2,3 ,4	Yes the form and table were correctly applied.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.6.4.3. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	1,2,3 ,4	Yes. It is expected to meet the time schedule.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.6.4.4. Is the data provided in this section in consistency with data as presented in other chapters of the PDD?	1,2,3 ,4	Yes, data is consistent within PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B.7. Application of the monitoring methodology and description of the monitoring plan</b>				
<b>B.7.1. Data and parameters monitored</b>				
B.7.1.1. Is the list of parameters presented in chapter B.7.1 considered to be complete with regard	1,2,3 ,4	<b><u>Corrective Action Request 5:</u></b> Most of parameters list below were not included in B7.1, pls. cor-	CAR5	<input checked="" type="checkbox"/>

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to the requirements of the applied methodology?		rect accordingly. Furthermore, all data collected as part of monitoring plan should be archived electronically and be kept at least for 2 years after the end of the last crediting period.  Moreover, more elaborate information needs to be added into the PDD according to the methodology.																										
B.7.1.2. Parameter Title: <b>FF<sub>i,y</sub></b> , quantity of fossil fuel type i combusted to supplement waste gas in the project activity during the year y, in energy or mass units (project emissions)	1,2,3 ,4	<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>	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	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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.7.1.3. Parameter Title: <b>NCV<sub>i</sub></b> , net calorific value of the fossil fuel i (project emissions)	1,2,3 ,4	<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></table>	Monitoring Checklist	Yes / No	Title in line with methodology?	N/A	Data unit correctly expressed?	N/A	Appropriate description of parameter?	N/A	Source clearly referenced?	N/A	Correct value provided for estimation?	N/A	Has this value been verified?	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
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																											

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		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.7.1.4. Parameter Title: <b>EF</b> <sub>CO<sub>2</sub>, i</sub> CO2 emission factor per unit of energy or mass of the fuel type i (project emissions)	1,2,3,4	Monitoring Checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		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.7.1.5. Parameter Title: <b>EC</b> <sub>PJ, y</sub> Additional electricity consumed in year y, for gas cleaning equipment, as a result of the implementation of the project activity. (project emissions)	1,2,3,4	Monitoring Checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Title in line with methodology?	Yes		
		Data unit correctly expressed?	Yes		
		Appropriate description of parameter?	Yes		
		Source clearly referenced?	Yes		
		Correct value provided for estimation?	Yes		
		Has this value been verified?	Yes		

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		Measurement method correctly described?	Yes		
		Correct reference to standards?	Yes		
		Indication of accuracy provided?	Yes		
		QA/QC procedures described?	Yes		
		QA/QC procedures appropriate?	Yes		
B.7.1.6. Parameter Title: <b>EF</b> <sub>CO2, EL, y</sub> CO2 emission factor for electricity consumed by the project activity in year y (project emissions)	1,2,3,4	Monitoring Checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Title in line with methodology?	Yes		
		Data unit correctly expressed?	Yes		
		Appropriate description of parameter?	Yes		
		Source clearly referenced?	Yes		
		Correct value provided for estimation?	Yes		
		Has this value been verified?	Yes		
		Measurement method correctly described?	Yes		
		Correct reference to standards?	Yes		
		Indication of accuracy provided?	Yes		
		QA/QC procedures described?	Yes		
		QA/QC procedures appropriate?	Yes		
B.7.1.7. Parameter Title: <b>FC</b> <sub>EL, CP, k, y</sub> Quantity of fuel type k combusted in the captive power plant at the project site in year y where k are the fuel types fired in the captive power plant at the project site in year y (project emissions)	1,2,3,4	Monitoring Checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		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		

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		Indication of accuracy provided?	N/A		
		QA/QC procedures described?	N/A		
		QA/QC procedures appropriate?	N/A		
B.7.1.8. Parameter Title: <b>NCV<sub>k</sub></b> Net calorific value of fuel type k where k are the fuel types fired in the captive power plant at the project site in year y (project emissions)	1,2,3,4	Monitoring Checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		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: <b>EF<sub>CO2, k</sub></b> Emission factor of fuel type k where k are the fuel types fired in the captive power plant at the project site in year y (project emissions)	1,2,3,4	Monitoring Checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		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		



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B.7.1.10. Parameter Title: $EC_{CP,y}$ Quantity of electricity generated in the captive power plant at the project site in year y (project emissions)	1,2,3 ,4	<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>	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	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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.7.1.11. Parameter Title: $ws_{i,j}$ fraction of total heat that is used by the recipient j in the project that in absence of the project activity would have been supplied by the ith boiler (baseline emissions)	1,2,3 ,4	<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>	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	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Monitoring Checklist	Yes / No																											
Title in line with methodology?	N/A																											
Data unit correctly expressed?	N/A																											
Appropriate description of parameter?	N/A																											
Source clearly referenced?	N/A																											
Correct value provided for estimation?	N/A																											
Has this value been verified?	N/A																											
Measurement method correctly described?	N/A																											
Correct reference to standards?	N/A																											
Indication of accuracy provided?	N/A																											
QA/QC procedures described?	N/A																											
QA/QC procedures appropriate?	N/A																											
B.7.1.12. Parameter Title: $Q_{WG,y}$ quantity of waste gas used for energy generation	1,2,3		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																								

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during year y (Nm3) (baseline emissions)	,4	Monitoring Checklist	Yes / No		
		Title in line with methodology?	Yes		
		Data unit correctly expressed?	Yes		
		Appropriate description of parameter?	Yes		
		Source clearly referenced?	Yes		
		Correct value provided for estimation?	Yes		
		Has this value been verified?	Yes		
		Measurement method correctly described?	Yes		
		Correct reference to standards?	Yes		
		Indication of accuracy provided?	Yes		
		QA/QC procedures described?	Yes		
		QA/QC procedures appropriate?	Yes		
B.7.1.13. Parameter Title: $EF_{elec,i,j}$ CO <sub>2</sub> emission factor for the electricity source i (i=gr (grid) or i=is (identified source)) , displaced due to the project activity, during the year y in tons CO <sub>2</sub> /MWh (baseline emissions)	1,2,3 ,4	Monitoring Checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Title in line with methodology?	Yes		
		Data unit correctly expressed?	Yes		
		Appropriate description of parameter?	Yes		
		Source clearly referenced?	Yes		
		Correct value provided for estimation?	Yes		
		Has this value been verified?	Yes		
		Measurement method correctly described?	Yes		
		Correct reference to standards?	Yes		
		Indication of accuracy provided?	Yes		
		QA/QC procedures described?	Yes		
		QA/QC procedures appropriate?	Yes		
B.7.1.14. Parameter Title: $EF_{CO_2, is, j}$ CO <sub>2</sub> emission factor per unit of energy of the fos- sil fuel used in the baseline generation source i	1,2,3 ,4	Monitoring Checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Title in line with methodology?	Yes		

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(i=is) providing energy to recipient j. (baseline emissions)		Data unit correctly expressed?	Yes		
		Appropriate description of parameter?	Yes		
		Source clearly referenced?	Yes		
		Correct value provided for estimation?	Yes		
		Has this value been verified?	Yes		
		Measurement method correctly described?	Yes		
		Correct reference to standards?	Yes		
		Indication of accuracy provided?	Yes		
		QA/QC procedures described?	Yes		
		QA/QC procedures appropriate?	Yes		
B.7.1.15. Parameter Title: <b>EF<sub>CO2, COGEN</sub></b> CO <sub>2</sub> emission factor per unit of energy of the fuel that would have been used in the baseline co-generation plant (baseline emissions)	1,2,3 ,4	Monitoring Checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		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.7.1.16. Parameter Title: <b>EG<sub>i,j,y</sub></b> quantity of electricity supplied to the recipient j by generator, which in the absence of the project activity would have sourced from I th source /I can be either grid or identified source) during the year y in MWh (baseline emissions)	1,2,3 ,4	Monitoring Checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Title in line with methodology?	Yes		
		Data unit correctly expressed?	Yes		
		Appropriate description of parameter?	Yes		
		Source clearly referenced?	Yes		

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		<table><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table>	Correct value provided for estimation?	Yes	Has this value been verified?	Yes	Measurement method correctly described?	Yes	Correct reference to standards?	Yes	Indication of accuracy provided?	Yes	QA/QC procedures described?	Yes	QA/QC procedures appropriate?	Yes													
Correct value provided for estimation?	Yes																												
Has this value been verified?	Yes																												
Measurement method correctly described?	Yes																												
Correct reference to standards?	Yes																												
Indication of accuracy provided?	Yes																												
QA/QC procedures described?	Yes																												
QA/QC procedures appropriate?	Yes																												
		It is not included in B7.1																											
B.7.1.17.      Parameter Title: <b>EG<sub>j,y</sub></b> quantity of electricity supplied to the recipient plant j by the project activity during the year y in MWh (baseline emissions)	1,2,3 ,4	<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table> <p><b>Corrective Action Request 6:</b> Value 304,500MWh/a should be total electricity generated by proposed project activity, electricity supplied to recipient plant should be 280.14 MWh/a Please correct it.</p>		Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	Yes	Has this value been verified?	Yes	Measurement method correctly described?	Yes	Correct reference to standards?	Yes	Indication of accuracy provided?	Yes	QA/QC procedures described?	Yes	QA/QC procedures appropriate?	Yes	CAR 6	☑
Monitoring Checklist	Yes / No																												
Title in line with methodology?	Yes																												
Data unit correctly expressed?	Yes																												
Appropriate description of parameter?	Yes																												
Source clearly referenced?	Yes																												
Correct value provided for estimation?	Yes																												
Has this value been verified?	Yes																												
Measurement method correctly described?	Yes																												
Correct reference to standards?	Yes																												
Indication of accuracy provided?	Yes																												
QA/QC procedures described?	Yes																												
QA/QC procedures appropriate?	Yes																												
B.7.1.18.      Parameter Title: <b>HG<sub>j,y</sub></b> net quantity of heat supplied to the recipient plant j by the project activity during the year y in TJ. In	1,2,3 ,4	<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr></table>		Monitoring Checklist	Yes / No	☑	☑																						
Monitoring Checklist	Yes / No																												

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case of steam this is expressed as difference of energy content between the steam supplied to the recipient plant and the condensate returned by the recipient plant(s) to element process of cogeneration plant. In case of hot water/oil this is expressed as difference in energy content between the hot water/oil supplied to and returned by the recipient plant(s) to element process of cogeneration plant) (baseline emissions)		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.7.1.19. Parameter Title: $EF_{CO_2, i, j}$ CO <sub>2</sub> emission factor per unit of energy of the baseline fuel used in ith boiler used by recipient j, in tCO <sub>2</sub> /TJ, in absence of the project activity (baseline emissions)	1,2,3 ,4	Monitoring Checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		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.7.1.20. Parameter Title: $EF_{CO_2, j}$ CO <sub>2</sub> emission factor of fossil fuel (tCO <sub>2</sub> /TJ) that would have been used at facility 'j' for flaring the waste gas (baseline emissions)	1,2,3 ,4	Monitoring Checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Title in line with methodology?	N/A		
		Data unit correctly expressed?	N/A		
		Appropriate description of parameter?	N/A		

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		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.7.1.21. Parameter Title: $Q_{i,h}$ amount of individual fuel (waste gas and other fuel(s)) i consumed at the energy generation unit during hour h (baseline emissions)	1,2,3 ,4	Monitoring Checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		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.7.1.22. Parameter Title: $EG_{tot,y}$ total annual energy produced at the cogeneration plants, with waste gas and fossil fuel (baseline emissions)	1,2,3 ,4	Monitoring Checklist	Yes / No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		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		

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		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.7.1.23.      Parameter Title: <b>Q<sub>WG, h</sub></b> quantity of waste gas used for energy generation per hour h (baseline emissions)	1,2,3 ,4	<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>No</td></tr><tr><td>Appropriate description of parameter?</td><td>No</td></tr><tr><td>Source clearly referenced?</td><td>No</td></tr><tr><td>Correct value provided for estimation?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>No</td></tr><tr><td>Correct reference to standards?</td><td>No</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>No</td></tr><tr><td>QA/QC procedures appropriate?</td><td>No</td></tr></table> It is not included in B7.1		Monitoring Checklist	Yes / No	Title in line with methodology?	No	Data unit correctly expressed?	No	Appropriate description of parameter?	No	Source clearly referenced?	No	Correct value provided for estimation?	No	Has this value been verified?	No	Measurement method correctly described?	No	Correct reference to standards?	No	Indication of accuracy provided?	No	QA/QC procedures described?	No	QA/QC procedures appropriate?	No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Monitoring Checklist	Yes / No																												
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Measurement method correctly described?	No																												
Correct reference to standards?	No																												
Indication of accuracy provided?	No																												
QA/QC procedures described?	No																												
QA/QC procedures appropriate?	No																												
B.7.1.24.      Parameter Title: <b>NCV<sub>WG</sub></b> net Calorific Value of Waste Gas (baseline emissions)	1,2,3 ,4	<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></table>		Monitoring Checklist	Yes / No	Title in line with methodology?	N/A	Data unit correctly expressed?	N/A	Appropriate description of parameter?	N/A	Source clearly referenced?	N/A	Correct value provided for estimation?	N/A	Has this value been verified?	N/A	Measurement method correctly described?	N/A	Correct reference to standards?	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
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		Indication of accuracy provided?	N/A																										
		QA/QC procedures described?	N/A																										
		QA/QC procedures appropriate?	N/A																										
B.7.1.25. Parameter Title: <b>ST<sub>whr, y</sub></b> energy content of the steam generated in waste heat recovery boiler fed to turbine via common steam header (baseline emissions)	1,2,3 ,4	<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>		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	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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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.7.1.26. Parameter Title: <b>ST<sub>other, y</sub></b> energy content of the steam generated in other boilers fed to turbine via common steam header (baseline emissions)	1,2,3 ,4	<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></table>		Monitoring Checklist	Yes / No	Title in line with methodology?	N/A	Data unit correctly expressed?	N/A	Appropriate description of parameter?	N/A	Source clearly referenced?	N/A	Correct value provided for estimation?	N/A	Has this value been verified?	N/A	Measurement method correctly described?	N/A	Correct reference to standards?	N/A	Indication of accuracy provided?	N/A	QA/QC procedures described?	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Monitoring Checklist	Yes / No																												
Title in line with methodology?	N/A																												
Data unit correctly expressed?	N/A																												
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QA/QC procedures described?	N/A																												



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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS			PDD in GSP	Final PDD																								
		QA/QC procedures appropriate?	N/A																											
B.7.1.27. Parameter Title: $EF_{heat, j, y}$ CO2 emission factor of the heat source that would have supplied the recipient plant j in absence of the project activity, expressed in tCO2/TJ (baseline emissions)	1,2,3,4	<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>			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	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Monitoring Checklist	Yes / No																													
Title in line with methodology?	N/A																													
Data unit correctly expressed?	N/A																													
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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.7.1.28. Parameter Title: steam flow rate	1,2,3,4	<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>			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	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Monitoring Checklist	Yes / No																													
Title in line with methodology?	N/A																													
Data unit correctly expressed?	N/A																													
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Indication of accuracy provided?	N/A																													
QA/QC procedures described?	N/A																													
QA/QC procedures appropriate?	N/A																													

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B.7.1.29. Parameter Title: pressure of steam	1,2,3 ,4	<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>	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	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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.7.1.30. Parameter Title: temperature of steam/hot water/hot oil	1,2,3 ,4	<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>	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	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Monitoring Checklist	Yes / No																											
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Correct reference to standards?	N/A																											
Indication of accuracy provided?	N/A																											
QA/QC procedures described?	N/A																											
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B.7.1.31. Parameter Title: $n_{BL, t}$ efficiency of element process/captive power plant/cogeneration plant during time interval $t$ where $t$ is a discrete time interval during the year $y$ (baseline emissions)	1,2,3 ,4	<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>	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	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Monitoring Checklist	Yes / No																											
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Correct reference to standards?	N/A																											
Indication of accuracy provided?	N/A																											
QA/QC procedures described?	N/A																											
QA/QC procedures appropriate?	N/A																											
B.7.2. Description of the monitoring plan																												
B.7.2.1. Is the operational and management structure clearly described and in compliance with the envisioned situation?	1,2,3 ,4	<p>The managing structure is clearly depicted in the PDD. All monitoring data will be recorded by appointed data collectors and verified by AIS data validator. Finally, the validated data will be input to CDM data management system by data validator and be archived electronically. On the other hand, the meter maintainer is responsible for calibration and regular maintenance of the meters.</p> <p><b><u>Clarification Request No. 7.</u></b></p> <p>Please include a diagram on which all meters include waste gas flow meters for BFG, LDG, COG measurement and electricity measurement meter.</p> <p>Please also clarify if meters mentioned above need backup ones for emergency situation.</p>	CR7	<input checked="" type="checkbox"/>																								
B.7.2.2. Are responsibilities and institutional arrangements for data collection and archiving	1,2,3 ,4	Yes, it is clearly indicated section B7.2 in PDD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																								

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clearly provided?				
B.7.2.3. Does the monitoring plan provide current good monitoring practice?	1,2,3 ,4	See B7.2.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.7.2.4. If applicable: Does annex 4 provide useful information enabling a better understanding of the envisioned monitoring provisions?	1,2,3 ,4	Not applicable. Annex 4 does not include additional information.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>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>				
B.8.1.1. Is there any indication of a date when the baseline was determined?	1,2,3 ,4, 15	Yes, it is 26/06/2008	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.8.1.2. Is this consistent with the time line of the PDD history?	1,2,3 ,4,15	Yes, it is consistent with that in Section A .1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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?	1,2,3 ,4,15	Yes. Entity is CAMCO International Limited.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.8.1.4. Is information provided whether this person / entity is also considered a project participant?	1,2,3 ,4,15	Yes. The mentioned person/entity is one of project participant.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>C. Duration of the project activity / crediting period</b>				
<b>C.1. Duration of the project activity</b>				
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	1,2,3 ,4	Yes, starting date is 30/04/2007, and operational lifetime is expected 10 years. <b>Clarification Request No. 8.</b> Please provide document to demonstrate what real action has	CR8	<input checked="" type="checkbox"/>

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		been taken place on the starting dated.		
<b>C.2. Choice of the crediting period and related information</b>				
C.2.1. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	1,2,3,4	Yes, fixed crediting period is 10 years, and starting date is expected on 01/12/2008.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>D. Environmental impacts</b>				
<b>D.1. Documentation on the analysis of the environmental impacts, including transboundary impacts</b>				
D.1.1. Has the analysis of the environmental impacts of the project activity been sufficiently described?	1,20,21	Yes, in accordance with approved EIA, the environmental impacts of the project activity which include waste gas, solid waste noise and waste water discharge have been clearly described in the PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been approved?	1,20,21	Yes. EIA was approved by Environment Protection Bureau of Henan province.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.3. Will the project create any adverse environmental effects?	1,20,21	Referred to the EIA and the approval of EIA, the project will create no negative environmental impacts.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.4. Were trans-boundary environmental impacts identified in the analysis?	1,20,21	The proposed project located within China, hence, this section is not applicable.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>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</b>				
D.2.1. Have the identified environmental impacts been addressed in the project design	1,20,21	Referred to EIA and its approval, the impacts of proposed project on environment were not considered significant.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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sufficiently?				
D.2.2. Does the project comply with environmental legislation in the host country?	1,20, 21	Yes, the project is in conformity with the environmental legislation of P. R. China.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>E. Stakeholders' comments</b>				
<b>E.1. Brief description how comments by local stakeholders have been invited and compiled</b>				
E.1.1. Have relevant stakeholders been consulted?	22,2 3,24, 25,2 6,27, 28	Yes, the relevant stakeholders have been consulted via two open public meetings dated on Dec. 8 and Dec 25, 2006 respectively. The local government officers and residents were invited. In the meeting, the project activity, the CDM scheme and environmental impacts have been introduced by project owner. Comments from participants were collected through the questionnaires.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	22,2 3,24, 25,2 6,27, 28	As introduced by project owner, invitation letter for project introduction meeting have been distributed by local government and project owner. Invitation letters for the two meetings are reviewed on site.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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?	22,2 3,24, 25,2 6,27, 28	There are no regulations/laws in China for carrying out the stakeholder consultation process for this project activity.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.4. Is the undertaken stakeholder process that was carried out described in a complete and transparent manner?	22,2 3,24, 25,2 6,27,	Yes. Confirmed with the detailed documents, the process is described in a complete and transparent manner.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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	28			
<b>E.2. Summary of the comments received</b>				
E.2.1. Is a summary of the received stakeholder comments provided?	22,2 3,24, 25,2 6,27, 28	The comments from stakeholder are collected and recorded in the meeting memo and been reviewed by auditor.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>E.3. Report on how due account was taken of any comments received</b>				
E.3.1. Has due account been taken of any stakeholder comments received?	22,2 3,24, 25,2 6,27, 28	Referring to PDD and evidence provided on site, all comments received are positive.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>F. Annexes 1 - 4</b>				
<b>F.1. Annex 1: Contact Information</b>				
F.1.1. Is the information provided consistent with the one given under section A.3?	1,2	Yes, it is consistent with that in section A.3.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.1.2. Is the information on all private participants and directly involved Parties presented?	1,2	Yes, they were presented .	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>F.2. Annex 2: Information regarding public funding</b>				
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?	1,2	Yes. There is no public funding taking place.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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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?	1,2	Not applicable.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>F.3. Annex 3: Baseline information</b>				
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?	1,2	Yes, it is consistent with data by other sections of PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.3.2. Is the data provided verifiable? Has sufficient evidence been provided to the validation team?	1,2	Yes. The data has been quoted from official documents which are available to validation team.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.3.3. Does the additional information substantiate / support statements given in other sections of the PDD?	1,2	See F3.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>F.4. Annex 4: Monitoring information</b>				
F.4.1. If additional background information on monitoring is provided: Is this information consistent with data presented in other sections of the PDD?	1,2	No, there is no additional information provided in Annex 4.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.4.2. Is the information provided verifiable? Has sufficient evidence been provided to the validation team?	1,2	See F4.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.4.3. Do the additional information and / or documented procedures substantiate / support statements given in other sections of the PDD?	1,2	See F4.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



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**Table 2 Resolution of Corrective Action and Clarification Requests**

Clarifications and corrective action re-quests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
<p><b><u>Clarification Request No. 1.</u></b></p> <ol style="list-style-type: none"> <li>Please include available hour per year of the waste gas from different sources and also the work hour of turbine-generator units consequently.</li> <li>A.2, 2<sup>nd</sup> paragraph: "141,704 Nm<sup>3</sup> of combustible waste gas is flared per hour" Page 25, last paragraph: "based on gas balance sheet, maximum quantity of waste gas ...is 136,121Nm<sup>3</sup>/h in year 2006" Please clarify which value is the most suitable one and used in fcap calculation. As shown in PDD, 13.4% of total waste gas, also 141,704 Nm<sup>3</sup>/h of waste gas is flared, but according to gas balance and technical description in FSR, value mentioned above is only from the blast furnace gas, it did not include the converter gas and coke oven gas, please also clarify that.</li> <li>Please prepare emission reduction calculation in independent spreadsheet and provide to DOE.</li> <li>According to the description in Chapter B.2. of PDD, the electricity might be delivered to</li> </ol>	A.2.1.	<ol style="list-style-type: none"> <li>In normal operation BFG is available up to 8400h and COG up to 8760h. Turbine-generators operate 7000h due to fluctuating gas quality and quantity and ongoing maintenance requirements</li> <li>141,704 Nm<sup>3</sup> is the calculated expected quantity of available waste gas which is mostly BFG, as mentioned in FSR, because waste gas consumption in the plant is used in the priority order of COG, LDG, BFG. It is not possible to give a precise breakdown of the quantities as the consumption elsewhere in the plant is variable. 136,121 Nm<sup>3</sup> is the figure from past 3 years used to calculate the baseline situation in fcap.</li> <li>A spreadsheet has been provided.</li> <li>All electricity will be consumed on site. Total generation at Angang 648.12 GWh, power purchased by Angang in 2006, 2169.07 GWh.</li> </ol>	<ol style="list-style-type: none"> <li>Please include the content in revised PDD. PP: information now included DOE's response: It has been revised in section A.2</li> <li>Qwg,bl equals to product of 136,121 Nm<sup>3</sup>/h and 8400h, i.e. <b>1,143,416,400Nm<sup>3</sup>/year.</b></li> <li>Spreadsheet for ER calculation provided. Calculation in it is inconsistent with that in PDD. Project emission is not zero as that in PDD.</li> </ol>

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the grid, however, in the monitoring plan, there's no description on how the electricity fed to the grid could be measured.		Chapter B.2 amended for clarity.	PP: Spreadsheet modified to be in line with PDD DOE's response It has been revised in ER calculation spreadsheet  4. It has been revised in B.2.
<p>The domestic technology of utilizing waste gas for electricity generation has been mature in China, therefore, according to project owner's plan, all equipments are developed and manufactured domestically.</p> <p><b><u>Clarification Request No. 2.</u></b></p> <p>As shown in gas balance in FSR, 141,704Nm<sup>3</sup>/h waste gas in Section A.2 is came from blast furnace gas(also 13.4% of total BFG), please also include the amounts of converter gas and coke oven gas per hour in this section.</p>	A.4.3.1.	The precise breakdown cannot be given because the available volume fluctuates greatly. This is for 2 reasons. The gas production fluctuates due to changes in iron, steel and coke production quantities. The gas consumption level fluctuates due to changes in load factor and maintenance of consuming equipment.	<p>Components of waste gas need be monitored by flow meter respectively.</p> <p>Refer to CR8.</p> <p>PP: Waste gas will be monitored according to diagram added to PDD (CR8). This provides sufficient monitoring to accurately determine Q<sub>wg</sub> and therefore f<sub>cap</sub> according to ACM0012 requirements.</p> <p>DOE's response: Diagram with flow meters has been added in section B7.2</p>
<p><b><u>Clarification Request No. 3.</u></b></p> <p>Please include summary of gases and sources and justify them respectively.</p>	B.3.2.	Table in section 3.2 has been updated.	It has been revised in section B3.
<p><b><u>Clarification Request No. 4.</u></b></p> <p>Please present the evidence of ruling out scenario W4.</p>	B.4.8.	PDD amended.	It has been revised in section B4.8.

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<p><b><u>Clarification Request No. 5.</u></b> Please include timetable in which progress of project implementation is clearly indicated. Please include timetable in which CDM events or actions are included. Please also provide evidence documents to support the timetables mentioned above.</p>	B.5.1	Timetable included in PDD as requested, including CDM specific actions. All items can be evidenced on request. Evidence for many items was already supplied during first validation.	Timetable includes CDM events and project progress has been included in revised PDD. Documents have been reviewed by audit team.
<p><b><u>Clarification Request No. 6.</u></b> 2. Please provide evidence document for annual O&amp;M cost calculation. 3. Besides the feasibility study report, pls. provide additional evidence on proving the reality of the total investment, the annual operation cost, operation hours and the electricity tariff. 4. In the calculation period, the fixed tariff and fixed operation cost are applied, pls. kindly clarify the reason of using the fixed value in the entire period.</p>	B.5.7.	<p>1. Evidence was supplied and agreed by TUEV SUEB's Certification Body by email in June 2008 and is now resupplied.</p> <p>2. Evidence of purchase contracts was already supplied at first validation. Please advise if you would like them to be resent.</p> <p>3. The IRR is calculated on fixed input values because the investment benchmark is also calculated based on fixed input values, as is the custom in China. This has been explained in the PDD.</p>	<p>1. Document for annual O&amp;M cost has been provided.</p> <p>2. Construction contract include equipment fee was provided to audit team.</p> <p>3. It has been explained below Table 1 in sub-step 2c in PDD</p>
<p><b><u>Clarification Request No. 7.</u></b> Net electricity delivered by project activity is 280.5GWh/year, but in table 1 and in IRR spreadsheet, the value is 280.14 GWh/year. Please clarify which value is most suitable one and re-calculate the baseline emission if necessary.</p>	B.6.3.3.	The correct value is 280.5GWh and this was used for baseline calculation. The PDD has been corrected	<p>One more mistake was not corrected in page 34 in PDD, BEy calculation, more "000" included in EGy. PP: PDD corrected DOE's response: it has been corrected in section B.6.3</p>
<p><b><u>Clarification Request No. 8.</u></b></p>	B.8.1.1.	Relevant diagrams provided	Flow meter diagram provided is too

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<p>Please include a diagram on which all meters include waste gas flow meters for BFG, LDG, COG measurement and electricity measurement meter.</p> <p>Please also clarify if meters mentioned above need backup ones for emergency situation.</p>		<p>Back up meters are kept in store, but not installed due to very low chance of breakdown. Flow meters calibrated to ISO 10012 specification.</p>	<p>complicated and no meters were specified for the proposed project. Please include brief meters diagram into PDD or Monitoring Plan for future monitoring, and identify meters for each kind of gas measurement. PP: diagram now included in monitoring plan DOE's response: <b>The revised diagram</b> with flow meters has been added in section B7.2</p>
<p><b><u>Clarification Request No. 9.</u></b></p> <p>Pls. kindly presented in the PDD on which real action or construction or implementation has been taken on 30/04/2007.</p>	C.1.1.	<p>30/04/2007 is the start date of construction. Purchase contracts for major equipment were in place by this time and the original GSP had been undertaken. Timetable included in B.5.1 as requested.</p>	<p>It has been included in section B5.1.</p>
<p><b><u>Corrective Action Request No.1.</u></b></p> <p>The project comes under Sector Scope 1: Energy Industries and Sector Scope 4: Manufacturing Industries.</p> <p>Please correct it in PDD.</p>	A.4.3.1	<p>PDD corrected.</p>	<p>It has been revised.</p>
<p><b><u>Corrective Action Request No.2.</u></b></p> <p>The electricity consumed in the case of no supply from the project itself needs to be considered as the project emission. The table in Chapter B.3 needs to be revised.</p>	B.3.6.	<p>This has been added to table B.3.2</p>	<p>It has been revised in table in Section B3.2.</p>
<p><b><u>Corrective Action Request No.3.</u></b></p> <p>Page 25, paragraph above EF formulae: As PDD applied fixed credit period as 10 years, first/second/third period and <math>Wom=0.25</math> and</p>	B.6.1.3	<p>PDD corrected</p>	<p>It has been revised.</p>

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Wbm=0.75 as well mentioned here should be corrected.			
<b><u>Corrective Action Request No.4.</u></b> The parameters listed below were not completed in B.6.2. Pls. kindly refer to the following section B.6.2.2. – B.6.2.25. for further requirement of each required parameter.	B.6.2.1	Required parameters now included in PDD.	It has been revised in B6.2.
<b><u>Corrective Action Request No.5.</u></b> Most of parameters list below were not included in B7.1, pls. correct accordingly. Furthermore, all data collected as part of monitoring plan should be archived electronically and be kept at least for 2 years after the end of the last crediting period. Moreover, more elaborate information needs to be added into the PDD according to the methodology.	B.7.1.1	Required parameters now included in PDD  Flow meters calibrated to standard 10012 as described above.	It has been revised in B7.1.
<b><u>Corrective Action Request No.6.</u></b> Since the scenario 1 is used, hence, the name of the parameter shall be <b>EG<sub>i,j,y</sub></b> , not <b>EG<sub>j,y</sub></b> . Value 304,500MWh/year should be total electricity generated by proposed project activity, electricity supplied to recipient plant should be the net electricity supplied to the recipient plant. Please correct it.	B.7.1.16	PDD corrected	It has been revised.
<b><u>Corrective Action Request No.7.</u></b> According to the guideline for completing the PDD (EB 41), the date of completion shall be presented in DD/MM/YYYY. Pls. amend the PDD.	B.8.1.1.	PDD corrected	It has been revised.

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**Table 3 Unresolved Corrective Action and Clarification Requests (in case of denials)**


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

## **Annex 2: Information Reference List**


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Reference No.	Document or Type of Information
1.	Project Design Document for CDM project “Angang Waste Gas Recovery and Generation Project“, dated on Mar. 1 <sup>st</sup> , 2007, version 1.0, submitted in Mar., 2007
2.	Consolidated baseline methodology for grid-connected electricity generation from renewable sources, version 06
3.	Consolidated baseline methodology for GHG emission reductions for waste gas or waste heat or waste pressure based energy system, ACM0012/02 version
4.	Tool for the demonstration and assessment of additionality, version 05
5.	Participant list of on-site interview, signed on April 1 <sup>st</sup> , 2007
6.	<div>On-site interviews and inspection at the office conducted on April 1<sup>st</sup>, 2007 by validators of TÜV SÜD.</div> <div>Validation team: Sven Kolmetz                      TÜV SÜD Industrie Service GmbH Cuiyun Zhang                      Jiangsu TUV Product Service Ltd.</div> <div>Interviewed persons: Mr. Zhang Qingyou              Anyang Iron &amp; Steel Group Co., Ltd.              Director Mr. Gu Lin                          Anyang Iron &amp; Steel Group Co., Ltd.              Director of Calibration Department Mr. Liu Yongming                Anyang Iron &amp; Steel Group Co., Ltd.              Project Manager Mr. Zhang Fengyi                Anyang Iron &amp; Steel Group Co., Ltd.              Manager of Energy Department Ms. Zhou Qiong                 WISDRI Engineering &amp; Research Inco., Ltd.      Financial Analyst Ms. Sophie Chou                 CAMCO International                                  CDM manager Mr. Eddie Zhang                 CAMCO International                                  CDM manager</div>
7.	Archaeological study evidence, Anyang Iron and Steel Group Co., Ltd., submitted on April 1st, 2007
8.	Feasibility report of Angang Blast Furnace Top Pressure Recovery Turbine Unit Project, dated in Aug., 2006, WISDRI Engineering & Research Inco., Ltd., submitted on April 1st, 2007
9.	Approval of feasibility report of Angang Blast Furnace Top Pressure Recovery Turbine Unit Project, dated on Oct. 25 <sup>th</sup> , 2006, Henan




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Reference No.	Document or Type of Information
	Development and Reform Commission, submitted on April 1st, 2007
10.	EPC contract of 30 MW electricity generation system, dated in Dec 8, 2006, WISDRI Engineering & Research Inco., Ltd., submitted on April 1st, 2007
11.	Methods and Parameters for Economic Assessment of Construction Project (version 3), CAMCO International, submitted on April 1st, 2007
12.	Connection system of the proposed project to the transformation stations
13.	Loan contract with Agriculture Bank of China, dated in Jan., 2007, submitted on April 1st, 2007
14.	Loan contract with China Construction Bank, dated in Mar., 2007, submitted on April 1st, 2007
15.	Carbon emission factor spreadsheet, CAMCO International
16.	China Electric Power Yearbook 2003-2006
17.	China Energy Statistical Yearbook 2000-2006
18.	Authorization certificate of calibration, Anyang Quality Technology Supervisor Bureau, submitted on April 1st, 2007
19.	Financial analysis, CAMCO International, submitted on April 1st, 2007 / the updated IRR spreadsheet, submitted in April of 2008
20.	EIA of Angang Blast Furnace Top Pressure Recovery Turbine Unit Project, dated on Sept. 20 <sup>th</sup> , 2006, Beijing Jingcheng Jiayu Environmental Science Company, submitted on April 1st, 2007
21.	Approval of EIA, date on Oct., 24 <sup>th</sup> , 2006, Henan Environment Protection Bureau, submitted on April 1st, 2007
22.	Invitation letter of the 1 <sup>st</sup> local stakeholder meeting, dated Nov. 28 <sup>th</sup> , 2006, Anyang Iron and Steel Group Co., Ltd., submitted on April 1st, 2007
23.	Meeting Memo of 1 <sup>st</sup> local stakeholder meeting, dated on Dec. 8 <sup>th</sup> , 2006, Anyang Iron and Steel Group Co., Ltd., submitted on April 1st, 2007
24.	Invitation letter of the 2 <sup>nd</sup> local stakeholder meeting, dated Dec. 10 <sup>th</sup> , 2006, Anyang Iron and Steel Group Co., Ltd., submitted on April 1st, 2007
25.	Meeting Memo of 2 <sup>nd</sup> local stakeholder meeting, dated on Dec. 25 <sup>th</sup> , 2006, Anyang Iron and Steel Group Co., Ltd., submitted on April 1st, 2007

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Reference No.	Document or Type of Information
26.	Participant list of meetings, Anyang Iron and Steel Group Co., Ltd., submitted on April 1st, 2007
27.	Questionnaire of local stakeholder comments, Anyang Iron and Steel Group Co., Ltd., submitted on April 1st, 2007
28.	Photos of local stakeholder meetings on Dec. 8 <sup>th</sup> and Dec. 25 <sup>th</sup> of 2006, Anyang Iron and Steel Group Co., Ltd., submitted on April 1st, 2007
29.	Geographical coordinates of project site, dated on Sept. 28 <sup>th</sup> , 2007, An Yang City Planning and Design Institute, submitted on Nov. 24 <sup>th</sup> , 2007
30.	Purchasing contract of gas boilers 35t/h countersigned by Jiangxi Jianglian Energy and Environmental Protection Company, submitted on Nov. 24 <sup>th</sup> , 2007
31.	Purchasing contract of turbine and generator 30MW countersigned by Luo Yang Generation Equipment Company, submitted on Nov. 24 <sup>th</sup> , 2007
32.	Purchasing contract of generation unit 7.5 MW countersigned by Hangzhou Turbine Co. Ltd., submitted on Nov. 24 <sup>th</sup> , 2007
33.	Maintenance and operation cost of boilers and steam turbine-generator unit, dated Mar 3, 2008, by Anyang Iron & Steel Group Co., Ltd
34.	Training plan organized by Luo Yang Generation Equipment Company, submitted on Nov. 24 <sup>th</sup> , 2007
35.	CDM Co-development Agreement, countersigned CAMCO International and Anyang Iron & Steel Group Co., Ltd., dated on Sept. 15 <sup>th</sup> , 2006
36.	Letter from Anyang Labor and Security Bureau of employee number for proposed project, dated June. 27, 2008
37.	LoA from China DNA, dated May 22, 2007
38.	LoA from United Kingdom, dated Dec. 12, 2007 for CAMCO International Limited.
39.	LoA from United Kingdom, dated Feb.22, 2008 for Noble Carbon Credits Limited.
40.	MoC,, dated Dec. 20, 2007
41.	Notice from the General Office of the PRC State Council on Strictly Prohibiting Constructing Thermal Power Units with the Capacity under 135MW
42.	Gas Security Regulations for Industrial Enterprises GB6222-2005

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Reference No.	Document or Type of Information
43.	Gas balance sheet and steel production in 2006, 2007, 2008
44.	Steam balance sheet in 2005-2008
45.	Application report of construction commencement of project activity, dated Apr 18, 2007, by Anyang Iron & Steel Group Co., Ltd
46.	Electricity generation and supply sheet in 2008 by project, dated on Mar 23, 2009
47.	Electricity tariff in Henan province, dated Jun. 30, 2006, numbered Yu Fa Gai Jia Guan [2006] 857.
48.	Manufactured Gas standard, dated Sep. 12, 2006, issued by National Standardized Commission of China.
49.	Cost break down for Angang WG project, provided by Anyang Iron & Steel Group Co., Ltd
50.	Confirmation letter of salary rate per employee, provided by Anyang Iron & Steel Group Co., Ltd, dated Mar. 3, 2008
51.	Annual Management and overhead cost for each employee, provided by Anyang Iron & Steel Group Co., Ltd, dated Mar. 3, 2008
52.	Unit cost of processing BFG, provided by Anyang Iron & Steel Group Co., Ltd, dated Aug.29, 2008