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Validation Report

Emissionshandels Gesellschaft Bavaria GmbH

VALIDATION OF THE CDM-PROJECT:

YICHENG BIOMASS COGENERATION PROJECT IN HUBEI PROVINCE, CHINA

REPORT NO. 600500035

26 November 2010

TÜV SÜD Industrie Service GmbH

Carbon Management Service
Westendstr. 199 - 80686 Munich – GERMANY

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Report No.	Date of first issue	Revision No.	Revision Date	Certificate No.
600500035	10-09-2009	4	26-11-2010	-

REMARK: The difference of this validation report, version 04, dated 26-11-2010 to validation report, version 03, dated 05-05-2010 consists of changes resulting from the request for review received on 02-11-2010 by UNFCCC CDM Project Registration Team.
The difference of this validation report, version 03, dated 05-05-2010 to validation report, version 02, dated 26-10-2009 consists of changes resulting from the Incomplete received on 02-03-2010 by UNFCCC CDM Project Registration Team.

<table>
<tr><td colspan="3">Subject: Validation of a CDM Project</td></tr>
<tr><td colspan="2">Accredited TÜV SÜD Unit:
TÜV SÜD Industrie Service GmbH
Certification Body “climate and energy”
Westendstr. 199
80686 Munich
Germany</td><td>TÜV SÜD Contract Partner:
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P.R. China</td></tr>
<tr><td colspan="2">Project Participant:
Emissionshandels Gesellschaft Bavaria GmbH
Paul-Helbich-Str.4,
Coburg 96450
Germany</td><td>Project Site(s):
Yicheng City, Hubei Province
P.R.China

GPS coordinates(gate of the plant):
Latitude 31.6481°, Longitude 112.7978°</td></tr>
<tr><td colspan="3">Project Title: Yicheng Biomass Cogeneration Project in Hubei Province, China</td></tr>
<tr><td colspan="2">Applied Methodology / Version: ACM0006/Version 10</td><td>Scope(s): 1
Technical Area: 1.2.</td></tr>
<tr><td colspan="2">First PDD Version:
Date of issuance: 05-09-2008
Version No.: 01
Starting Date of GSP 25-09-2008</td><td>Final PDD version:
Date of issuance: 20-11-2010
Version No.: 05</td></tr>
<tr><td colspan="2">Estimated Annual Emission Reduction:</td><td>143,033 tCO_2e</td></tr>
<tr><td colspan="2">Assessment Team Leader:
Xiaoyan Liu
Assessment Team Members：
Lixin Li;Ruifeng Li;Qin Huang[1]</td><td>Technical Reviewer:
Johann Thaler; Thomas Kleiser
Responsible Certification Body Members:
Rachel Zhang</td></tr>
</table>

[1] Lixin Li, Ruifeng Li, Qin Huang have left TÜV SÜD

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 is recommending the project for registration by the CDM Executive Board if letters of approval of all Parties involved will be available before the expiring date of the applied methodology(ies) or the applied methodology version respectively.

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

Abbreviations

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

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1 INTRODUCTION

1.1 Objective

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

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

Yicheng Biomass Cogeneration Project in Hubei Province, China

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, social impacts, and aspects of CDM project activity
- Sector specific technologies and their applications
- Current technical and operational knowledge of the specific sectoral scope and information on best practice

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

Once TÜV SÜD receives a first PDD version, it is made publicly available at the UNFCCC webpage and at TÜV SÜD's webpage to start a 30 day global stakeholder consultation process (GSP). In special circumstances, e.g. certain conditions allow the GSP to be repeated, a request to revise the PDD will be processed. The original PDD and the modified PDD will form the basis for the final evaluation. Information on both PDD's is presented on page 2.

The purpose of a validation is its use during the registration process as part of the CDM project cycle. Therefore, 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 01.1. The work starts with the appointment of the team covering the sectoral scope(s), technical area(s),and relevant host country experience 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 organizes details and clarifies the requirements a CDM project is expected to meet;

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

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

Validation Protocol Table 1: Conformity of Project activity and PDD				
Checklist Topic / Question	**Reference**	**Comments**	**PDD in GSP**	**Final PDD**
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.	*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 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*	*Conclusions are presented based on the assessment of the first PDD version. This is either acceptable based on evidence provided (☑), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below). **Clarification Request (CR)** is used when the validation team has identified a need for further clarification. **Forward action request** to highlight issues related to project*	*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.*

	the PDD.	***Request** has to be substantiated within this column*	*implementation that require review during the first verification.*	

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

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**	**Explanation of the Conclusion for Denial**
If the final conclusions from table 2 results in a denial the referenced request should be listed in this section.	*Identifier of the Request.*	*This section should present a detail explanation, why the project is finally considered not to be in compliance with a criterion with a clear reference to the requirement which is not complied with.*

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

2.1 Appointment of the Assessment Team

According to the technical scopes and experiences in the sectoral or national business environment TÜV SÜD has composed a project team in accordance with the appointment rules of the TÜV SÜD certification body "climate and energy". The composition of an assessment team has to be approved by the Certification Body (CB) to assure that the required skills are covered by the team. The CB TÜV SÜD operates 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 and technical area linked to the methodology have to be covered by the assessment team.

Name	Qualification	Coverage of sectoral scope	Coverage of technical area	Host country experience
Ms. Xiaoyan Liu	**ATL**	☑	☑	☑
Mr. Li Lixin[2]				☑
Mr. Ruifeng Li[3]				☑
Mr. Qin Huang[4]				☑

Xiaoyan Liu is a senior engineer for Environmental Engineering and head at section of "Carbon Recourse Management" in Beijing branch office, Jiangsu TUV Product Service Ltd. She is also a lead auditor for environmental management systems and holds a Master Degree in environmental science. In her position she is responsible for the implementation of validation, verification and certifications audits for GHG projects. She received training in the CDM validation process early in 2006 and has participated already in many CDM project assessments as auditor / ATL.

Lixin Li has received training in the environmental management systems (according to ISO 14001) at Jiangsu TUV Product Service Ltd. He is based in Beijing. In his position he is responsible for the implementation of validation, verification and certifications audits for management systems. He has received training in the CDM validation process and participated already in various CDM project assessments as a GHG auditor.

Ruifeng Li was an auditor for environmental management systems (according to ISO 14001) at Jiangsu TUV Product Service Ltd. He is based in Beijing. In his position he is responsible for the implementation of validation, verification and certifications audits for management systems. He has received training in the CDM validation process and participated already in various CDM project assessments as a GHG auditor trainee.

Qin Huang was an auditor trainee at the "Carbon Management Service" department of Jiangsu TUV Product Service Ltd in Beijing, China. He holds a M.Sc. in industrial ecology and has gathered experience in environmental engineering before joining TÜV SÜD China. He has received training in the CDM validation process and participated in several CDM project assessments.

2.2 Review of Documents

The first version of the PDD was submitted to the DOE in September 2008. The first PDD version submitted by the PP and additional background documents related to the project design and baseline have been reviewed to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources has been done as initial step of the validation process. A complete list of all documents and proofs reviewed is attached as annex 2 to this report.

[2] Lixin Li was not appointed according to TÜV SÜD new requirements

[3] Ruifeng Li was not appointed according to TÜV SÜD new requirements

[4] Qin Huang was not appointed according to TÜV SÜD new requirements

2.3 Follow-up Interviews

On 20 October 2008 TÜV SÜD performed interviews and 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. Xuntao Zhuang	Emissionshandels Gesellschaft Bavaria GmbH
Ms. Xiaodong Cheng	Anneng (Yicheng) Biomass Thermo-Electricity Co. Ltd

2.4 Further cross-check

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

2.5 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation is to resolve the requests for corrective actions, clarifications, and any other outstanding issues which needed to be clarified 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 submitted November 2010 serves as the basis for the final assessment presented. 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. These are an achievement of reduction of anthropogenic GHG emissions and to contribute to a sustainable development.

2.6 Internal Quality Control

As final step of a validation activity the final documentation, which includes the validation report and the validation protocol, has to undergo an internal quality control by the CB “climate and energy”. That means that each report has to be approved either by the head of the CB or the deputy. In projects where either the Head of the CB or his/her Deputy is part of the assessment team approval can only be given by the either one not serving on the project.

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 Anneng (Yicheng) Biomass Thermo-Electricity Co. Ltd. of People's Republic of China and Emissionshandels Gesellschaft Bavaria GmbH of Germany. The host Party China and further participant Party Germany meet the requirements to participate in the CDM.

The DNA of Germany has issued a LoA (IRL 26) on October 14, 2009 authorizing Emissionshandels Gesellschaft Bavaria GmbH as a project participant. The DNA of China has also issued a LoA (IRL 25) in November 2008 authorizing Anneng (Yicheng) Biomass Thermo-Electricity 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 confirms the approval of this CDM project.

Furthermore, after checking the provided LoAs, TÜV SÜD confirms that both letters refer to the precise proposed CDM project activity title in line with the title in the PDD "Yicheng Biomass Cogeneration Project in Hubei Province, China".

Both letters also indicate that each participating Party is a Party to the Kyoto Protocol, and that the participation in the project "Yicheng Biomass Cogeneration Project in Hubei Province, China" 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.

Both LoAs have been issued by the respective Party's DNA, National Development and Reform Commission of the People's Republic of China and Umweltbundesamt - Deutsche Emissionshandelsstelle of Germany, respectively.

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.

3.2 Participation

See section 3.1.

3.3 Project design document

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

The most recent version of the PDD form was used.

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

3.4 Project description

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

The proposed project is located in Yicheng city, Hubei Province, P. R. China which will utilize local surplus biomass residues (mainly being rice straw, rape stalk and cotton stalk) for generating heat and electricity. It is a green-field power project involving the installation of two 75t/h biomass direct burning boilers and two 12MW steam turbine generators, which are all produced domestically. The total installed capacity is 24MW. The surplus biomass residues within 21km radio around the project plant will be collected. It is estimated that the project can deliver 141.96 GWh of electricity to the Central China Power Grid, and may supply 529,740 GJ of heat to surrounding industrial and commercial heat/steam demanders annually in the future..

The pre-project situation and the baseline scenario are identical:

- Electricity is supplied by the Central China Power Grid;
- Heat to supply consumers of surrounding industrial and commercial heat/steam demanders is produced from coal-fired boilers;
- Straw and stalk are dumped or left on field, to be decayed under mainly aerobic conditions or burnt in an uncontrolled manner.

The proposed project will achieve emission reductions from displacing grid electricity, and avoiding CH_4 emissions from straw decay or burning. The estimated annual GHG emission reductions are 143,033 t CO_2e. Emission reductions from heat will not be claimed (Please refer to Chapter 3.5.3 below).

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.
- Finally information related to similar projects or technologies as the CDM project activity have been used to confirm the accuracy and completeness of the project description.

Regarding the Incompleteness item 7 raised by EB on 2 March, 2010, DOE validated that the lifetime of the proposed project would be 20 years and verified against FSR (IRL 10). The lifetime mentioned in Section A.4.3 of the PDD was for the steam turbine and generators. It is plausible that their lifetime as equipment is longer than the proposed project. Therefore, the lifetime of 20 years of the proposed project mentioned in Section C.1.2 of the PDD is reasonable and appropriate.

In conclusion, TÜV SÜD confirms that the project description, as included to the PDD, is sufficiently accurate and complete in order to comply with the requirements of the 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 ACM0006 Version 10 has been demonstrated. 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 assess-

ment 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, which also includes the steps taken. The results on the compliance check, as well as the relevant evidence, are detailed in Annex 1.

Regarding the Incompleteness item 2 raised by EB on 2 March, 2010, DOE validated by on-site audit and follow-up interviews, there are 20 boilers that was operating at the project site during the most recent three years prior to the start of the project activity. And the types and exact locations of the boilers as well as the type of fuels which have been used in the boilers have been documented in the PDD. All the boilers will stop operation once the proposed project starts. Furthermore, the PP has decided to not claim the emissions reductions from heat displacement in the proposed project. Therefore, the capacity of the boilers and the quantities of fuels used in most recent three years were not provided.

Meanwhile, the audit team confirmed there are no any other heat generation equipments at the project site, which have been identified during the most recent three years prior to the start of the project activity or under the project activity. Therefore, TÜV SÜD confirms that the chosen baseline and monitoring methodology is applicable to the project activity.

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

3.5.2 Project boundary

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

The project boundary was defined by the PPs in accordance with provisions ACM0006 version 10. It includes the power plant at the project site, all power plants connected physically to the Central China Power Grid, sites where biomass residues would have been left to decay or burned, and the means for transportation of biomass to the project site.

This project boundary is also in compliance with the boundary given in ACM0002, which is used for determining baseline emissions that are associated with grid electricity generation.

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

- Feasibility Study Report (IRL 10)
- Project Approval issued by Hubei Development Reform Commission (IRL 11)
- Approval Letter of Grid Connection System issued by Hubei Province Electric Power Co., Ltd (IRL 14)

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.

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

3.5.3 Baseline identification

The proposed project is a green-field biomass cogeneration project. Before the implementation of the project, there are no existing biomass residues fired boilers, power plants or cogeneration plants at the project site or other sites within Yicheng city.

The following baseline scenario is defined in the PDD:

- For power (P4): The generation of power in the grid.
- For heat (H6): The generation of heat in boilers using coal as fossil fuels.
- For biomass use (B1 or B3): The biomass residues are dumped or left to decay under mainly aerobic conditions or burnt in an uncontrolled manner without utilizing it for energy purposes.

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

- The officially approved Feasibility Study Report (IRL 10)
- Energy Conservation Law of the People's Republic of China (IRL 38)
- The 11th Five-Year Plan for Energy Development issued by NDRC (IRL 55)
- Forbidding Construction of Fossil Fuel Fired Power Plants of or under 135 MW issued by State Council of P.R.China (IRL 40)
- Interim Measures on Construction and Management of Small Thermal Power Generators issued by Ministry of Power Industry of China (IRL 41)
- Directive Catalogue on Renewable Industry Development issured by NDRC (IRL 39)

TÜV SÜD has determined that no reasonable alternative scenario has been excluded. Based on the validated assumptions TÜV SÜD considers that the identified baseline scenario is reasonable.

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

A verifiable description of the baseline scenario has been included in 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

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

The assumptions and data used to determine the emission reductions are listed in the PDD and all the sources have been checked and confirmed. Based on the information reviewed it 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 and references reviewed, as well as, the result of the interviews. The baseline methodology has been correctly applied according to requirements. The estimate of the baseline emissions can be confirmed as the same that 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 Annex 1. The algorithms for the determination of the baseline, project, and leakage emissions are discussed in the following sections.

3.5.4.1 Baseline Emissions

As per the methodology, baseline emissions may consist of:

- Baseline emissions from electricity generation;
- Baseline emissions from heat production;
- Baseline emissions from biomass decay/burning.

Regarding the Incompleteness item 1 and 3 raised by EB on 2 March, 2010, DOE highlighted that the PPs has chosen not to claim the baseline emissions from heat displacement in the proposed project. Firstly, the PP could not indentify all the potential end-users in the surrounding industrial and commercial areas as the heat supply network is still pending. And they could not have a full control over the users of the steam without valid contract. In additions, the PP was not able to substantiate their monitoring methods of steam productions in a conservative manner. Therefore, only baseline emissions from electricity and biomass decay/burning are included in the proposed project.

Baseline emissions from electricity generation

The calculation of baseline emissions due to displacement of electricity follows the procedures described in the methodology ACM0006, Version 10, in combination with ACM0002, Version 11 and Version 02 of the “Tool to calculate the emission factor for an electricity system”. The Central China Power Grid (CCPG) is considered to be the project boundary. The data used to calculate the emission factor were the latest available data at the start of the validation process.

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

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.

The calculated EF_{OM} for the Central China Power Grid is 1.2783 tCO_2/MWh, the calculated EF_{BM} is 0.7156 tCO_2/MWh. The resulting combined margin (EF_{CM}) is 0.99695 tCO_2/MWh. These values are consistent with the latest available emission factors calculated and published by the Chinese DNA at the time the validation process started (September 2008).

Baseline emissions from biomass decay/burning

Baseline emissions from biomass decay/burning are estimated by determining the quantity of biomass residues used as a result of the project activity and estimating methane emissions from burning the residues or leaving the residues to decay on the fields on the fields. Because of the mostly aerobic treatment of the straw, the PPs do not assume any methane emissions from anaerobic decay. Therefore baseline emissions are calculated by multiplying the quantity of biomass residues that would not be used in the absence of the project activity with the net calorific value, an appropriate emission factor and the GWP of methane. The PP selects the default value of 0.0027 t CH_4/ton of biomass as the CH_4 emission factor. Furthermore, due to the high uncertainty of the CH_4 emission factor, a conservativeness factor of 0.73 is used, which corresponds to an estimated uncertainty of greater than 100% according to the methodology. Hence, the resulting CH_4 emission factor is 0.001971 t $CH_4/t_{biomass}$

3.5.5 Project emissions

As per methodology, project emissions shall include:

- CO_2 emissions from transportation of biomass residues to the project site (PET_y);
- CO_2 emissions from on-site consumption of fossil fuels due to the project activity ($PEFF_y$);
- CO_2 emissions from consumption of electricity ($PE_{EC,y}$);
- Where this emission source is included in the project boundary and relevant: CH_4 emissions from the combustion of biomass residues ($PE_{Biomass,CH4,y}$); (here: rice straw, rape stalk and cotton stalk)
- Where waste water from the treatment of biomass residues degrades under anaerobic conditions: CH_4 emissions from waste water

Except for project emissions from waste water from the treatment of biomass residues, all sources for project emissions as identified per methodology are correctly considered in the PDD and in the calculation of emission reductions.

3.5.6 Leakage

According to the methodology, the main potential source of leakage for this project activity is an increase in emissions from fossil fuel combustion or other sources due to diversion of biomass residues from other uses to the project plant as a result of the project activity (ACM 0006, Version 10, Scenario 2).

For the baseline scenario used in the project activity (Scenario 2), the PPs shall demonstrate that the use of the biomass residues does not result in increased fossil fuel consumption elsewhere. For this purpose, PPs shall assess as part of the monitoring the supply situation for the types of biomass residues used in the project plant.

In order to assess the biomass residues supply situation, the PPs chose Option L_2 of the methodology, which requires demonstrating in the monitoring that there is an abundant surplus of biomass residues in the project area which is not utilized. For this purpose the methodology requires the PPs to demonstrate that the quantity of the biomass residue is at least 25% larger than the quantity of biomass residues that are utilized, including the project plant.

In the PDD it is demonstrated, that the quantity of available biomass residues within a radius of 21 km around the project plant is about 67% larger than the quantity of biomass residues that are utilized, including the project.

The DOE confirms that available evidence (IRL10, approved feasibility study) is sufficient to confirm that due to the abundant surplus of biomass residues in the region of the project activity, the occurrence of leakage from the project activity is unlikely.

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 demonstrated in the PDD using Version 02.2 of the “Combined tool to identify the baseline scenario and demonstrate additionality”.

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

- FSR with lower IRR than the benchmark completed in August 2007, in which the PPs was suggested to pursue the CDM supports (IRL 10)
- IRR calculation spreadsheets (IRL 31)

During the on-site audit, the additionality of the project has been discussed with Mr. Cheng Xiaodong from the project company (Anneng (Yicheng) Biomass Thermo-Electricity Co. Ltd.) and Mr. Zhuang Xuntao from the second project participant (Emissionshandels Gesellschaft Bavaria GmbH). Further documents have been reviewed on-site (Annex 2).

Finally, the data, rationales, assumptions, justifications, and documentation provided have been verified using local knowledge as well as sectoral and financial expertise. This information was also confirmed through the following documentation:

- FSR Approval issued in November 2007 (IRL 11)
- Feasibility Study Provision of Project Combined Heat and Power Generation (IRL 48)
- Meeting Minute for CDM consideration (IRL 16)

Based on these validation steps we 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 the date of the signing of Turbines and Generators Purchase Agreement (9 April 2008, IRL 18), which is the earliest date at which either the implementation or construction or real action of a project activity begins. In order to corroborate this information the assessment team has reviewed the following documents: General Contract (signed in May 2008, IRL 21), Purchase agreement for Boilers (signed on April 20, 2008, IRL 19) and Construction Permission (issued in July 2008, IRL 24), additionally the assessment team verified this

information with Mr. Cheng Xiaodong, Vice President of Anneng (Yicheng) Biomass Thermo-Electricity Co., Ltd

The starting date of the project activity is determined to be 9 April 2008, which is before 02 August 2008, as well as prior to the GSP. The PPs presented the following information regarding prior consideration of CDM to the assessment team:

- Meeting Minute regarding the implementation of this project as a CDM project issued in December 2007 (IRL 16)
- Letter of Intent for CDM cooperation signed in March 2008 (IRL 17)

The original documents presented have been reviewed and verified based on interviews with Mr. Cheng Xiaodong, the Vice President of Anneng (Yicheng) Biomass Thermo-Electricity Co., Ltd and Mr. Zhuang Xuntao, Project Manager of Emissionshandels Gesellschaft Bavaria GmbH. Therefore the documents can be considered appropriate to confirm the prior consideration of CDM before the project start. Additionally, in order to confirm that the PPs have taken real actions to continue the activity as CDM, the following timeline has been reviewed against the respective documents presented in the table below:

Activity	**Document**	**Auditor conclusion**
May 2008 ERPA signed	ERPA (IRL 22)	ERPA was signed between Anneng (Yicheng) Biomass Thermo-Electricity Co. Ltd. and Emissionshandels Gesellschaft Bavaria GmbH. The assessment team can confirm that the evidence is authentic and the CDM status was followed up in parallel with the project implementation.
September 2008 GSP started	UNFCCC website	Starting of validation work by TÜV SÜD clearly indicates that the CDM status was also followed upon.
December 2008 China LoA issued	China LoA (IRL 25)	LoA issued by China DNA is authentic and reliable, on-going CDM activity.
April 2009 MoC signed	MoC (IRL 27)	MoC was signed between Anneng (Yicheng) Biomass Thermo-Electricity Co. Ltd. and Emissionshandels Gesellschaft Bavaria GmbH. The evidence has been verified and it clearly indicates that CDM actions were still on-going.
2008-2009	-	On-going TÜV SÜD validation works

This confirms that the project complies with the requirements to demonstrate the prior consideration of the CDM.

3.6.2 Identifications of alternatives

The input of the project is biomass residue and the outputs of the project are electricity and heat. The lists of alternatives to electricity and heat generation as well as the use of biomass residue, which are presented in the PDD respectively, include the project activity undertaken without being registered as CDM project. The rest of the alternatives presented do include all plausible scenarios taking into account the local and sectoral situations for the outputs mentioned. Hence the lists of alternatives are considered to be complete.

3.6.3 Investment analysis

The PPs use the investment analysis to demonstrate the additionality. 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 a review of the source presented in the PDD, inter alia: FSR. All input data of financial calculation used in the PDD and associated annexes are fully consistent with the FSR, which have been confirmed verbally on-site. FSR was completed by a qualified third-party China City Environment Protection Engineering Limited Company and approved by Hubei Development Reform Commission and thus can be considered as a reliable and accurate source of input data of investment analysis. Furthermore, the period of time between the finalization of the FSR (August 2007) and the investment decision (December 2007) is only 4 months, therefore it can be confirmed that it is unlikely that the input values have significantly changed.

Additionally, the assessment team cross-checked the input parameters from FSR with the evidences provided by the PPs and publicly available information as follows:

- Total static investment

Total static investment is estimated to be 225.17 Mio RMB in the FSR, not including costs of local heat pipeline network since it is another independent project (IRL 63). However, according to the General Contract signed between the project owner and China City Environment Protection Engineering Limited Company in May 2008 (IRL 21), the total contract value has reached to be 230.00 Mio RMB, 2% higher than the FSR estimate. Hence the applied value in FSR/PDD financial analysis is considered as conservative.

- Electricity Tariff

The electricity tariff used in the IRR calculations is 0.5265 RMB/kWh without VAT for the first 15 operation years and then 0.3128 RMB/kWh without VAT for the following years. It is taken from the FSR and also identical with the real tariff approval issued by Hubei Province Price Bureau in April 2008 (IRL 20). Therefore, the assessment team can confirm that the applied tariff is appropriate.

- Heat Price

The heat price in the financial analysis of FSR/PDD is 119 RMB/tonnes (excl. VAT), which is equivalent to 43.8 RMB/GJ (excl. VAT) (IRL 73). According to the Hubei Province Heating Price Management Method (Provisional), the heat price of the power cogeneration projects must be approved by Hubei Province Price Bureau (IRL 52).The actual heat price of the proposed project is not available yet, since the construction of local heat supply network is still pending. The assessment team reviewed the heat price of similar projects in Hubei Province (see the following table 1). It was found that the price of the proposed project is the highest one of similar projects. Even with this highest heat price of 43.8 RMB/GJ, the project IRR is 6.1%, far below the benchmark of 8%. Therefore, the audit team can confirm that the heat price applied in the project investment analysis is conservative.

Table 1 Similar Projects in Hubei Province

Ref. No.	Project Name	Status	Heat price (RMB/GJ)	VAT status	Annual Operation hours
3044	Jianli Kaidi Biomass Power Project	Registered	29.85	Excl. 13% VAT	6000
3055	Jingshan Kaidi Biomass Power Project	Under going completeness	29.85	Excl. 13% VAT	6000
3057	Qichun Kaidi Biomass Power Project	Under going completeness	29.85	Excl. 13% VAT	6000
-	Hubei Dangyang 25MW Biomass Power Project	At validation	Power Only	N.A.	5220
-	Hubei Shayang 15MW Biomass Power Generation Project	At validation	Power Only	N.A.	5400
3089	Yicheng Biomass Cogeneration Project in Hubei Province, China	Request for review	43.8	Excl. 13% VAT	6500

- Biomass residues' price

The biomass residues' price is estimated to be 232.8 RMB/tonnes in FSR. Regarding the Incompleteness item 4 raised by EB on 2 March, 2010, though the biomass residues are either dumped or left to decay in the absence of the project activity, they would be the useful fuel once the proposed project is in operation, hereby the implementation of the proposed project has created a market for the original waste resources and added the market value to them. Furthermore, the project company does not own biomass and its residues. It is not possible for the project owner to get these biomass fuels for free and the project owner has to buy and pay for the cost of collection and transportation of biomass residues. As mentioned in the FSR, the expected price of biomass residues is estimated based on the cost for packing, transportation, storage and newly established biomass residues collection networks. The audit team can verify that the estimated biomass residues price of 232.8 RMB/t is lower than the real price of 254 RMB/t as indicated in the biomass purchase contract signed between the project owner and the biomass supplier in July 2008 (IRL 37). Hence, the applied biomass residues' price in FSR/PDD financial analysis is considered as conservative and appropriate.

- O&M cost

The O&M cost assumed in the financial analysis is 70.73 Mio. RMB annually. According to "Economic Evaluation and Influences Factors Analysis on Biomass Combustion for Power Generation", a research issued in Renewable Energy Resources Vol.26 No.2, the O&M costs of Chinese biomass power generation projects would be more than 550 RMB/MWh (IRL 49). The annual O&M cost of this project is 498 RMB/MWh which is considered as reasonable and conservative.

- Operation hours

The operation hours in FSR/PDD are 6500h. The assessment team cross-checked the Implementation Status Power Generation Plan in 2008 and Generation Plan of Power Station in 2009

of Hubei Grid (IRL 49) and found that the max. operation hours of other thermoelectric plants in Hubei Grid is only 5806h, much lower than the proposed project. Furthermore, the operation hours of the project is designed by a third-party - China City Environment Protection Engineering Limited Company ordered by the project owner. The load factor of 74% is same as that supplied to local government when applying for implementation approval (IRL 11). Hence it is no doubt that the estimate of the load factor is in line with the requirement 3 a) and b) mentioned in EB48 annex 11.

Regarding the Incompleteness item 5(b) raised by EB on 2 March, 2010, "*the operational hour as the proposed project applies lower operational hours (of 6,500 hours/ year) than the other similar projects (e.g., project 2230 applies 6,975 hours)*", the audit team concludes that firstly the project 2230 is in Jiangsu Province, east region of China, different from the central of China where the proposed project is located; on the other hand, as one of three pilot biomass cogeneration projects in China, the PP of the project 2230 was lack of practical experiences, either in the design phase or in operations. According to the registered PDD of project 2230, the actual annual operation hours are less than 1900 hours, far lower than the designed value of 6975 hours, which was obviously overestimated (IRL 65).

TÜV SÜD also compares the proposed project activity with all the other six biomass projects in the same region (Hubei Province), which is ongoing incompleteness check or under validation process. Their annual operating hours range from 5220 to 6000 hours (Please refer to the above table 1). The operation hours of the proposed project are higher than the rest of them. Furthermore, the assessment team reviewed the latest available Power Purchase Notice (IRL 61) issued by Hubei Power Company which confirms that the operation hours of 6500h for the proposed project is appropriate.

In summary, the audit team deems that the applied operation hours are reasonable and plausible.

- Steam supply

The annual steam supply of 529,740GJ (195,000ton) applied in the financial analysis is sourced from the FSR (IRL 10). The value was calculated by the qualified FSR design institute China City Environment Protection Engineering Limited Company based on the on-site investigation of local heat load and rated steam parameters (steam pressure and temperature). It was also confirmed by local experts and finally approved by the authority Hubei Development Reform Commission (IRL 11). The 3rd party projection organization and confirmation from local experts and approval from the local government department have been considered to be reliable sources and the audit team is able to confirm that the steam supply assumed in financial calculation is appropriate.

Regarding the Incompleteness item 6 raised by EB on 2 March, 2010, the benchmark used for the financial comparison has been obtained from Interim Rules on Economic Assessment of Electric Engineering Retrofit Projects issued by State Power Corporation of China (IRL 30). The audit team can confirm that the benchmark of 8% (project IRR after tax) is appropriate for the underlying project activity. Firstly the benchmark of 8% is widely accepted and used in the financial analysis of Chinese biomass power projects. The audit team checked 14 registered Chinese biomass projects so far and found that among 14 registered projects there are 12 projects applying the investment analysis and all of them have 8% as the benchmark (please refer to the following table 2). Secondly as for the cogeneration project, there is not clearly consolidated IRR benchmark stipulated by the government in China yet. According to the Feasibility Study Provision of Project Combined Heat and Power Generation (IRL 48), which is applicable for the cogeneration projects with capacity equal or less than 300MW, indicates that the investor is entitled to determine the specific IRR case by case in order to adapt the market

fluctuations. Therefore, it is deemed that the benchmark used is appropriate for this project. Further assumptions presented in the financial analysis inter alia VAT rate (17% for electricity and 13% for heat supply) and income tax rate of 25% have also been reviewed and were found to be appropriate based on Provisional Regulations of the People's Republic of China on Value Added Tax (IRL 44) and Provisional Regulations of the People's Republic of China on Enterprise Income Tax (IRL43). This confirms that the underlying assumptions are appropriate for this project.

Table 2 Registered Biomass Projects in China

Ref.	Project Name	Investment Analysis/Barrier Analysis	Benchmark
0811	Shandong Yucheng Xinyuan Biomass Heat & Power ("Yucheng Biomass CHP")	Investment Analysis	8%
0820	Zhongjieneng Jurong 2*12MW Biomass Direct Burning Power Plant Project	Investment Analysis	8%
0819	Zhongjieneng Suqian 2*12MW Biomass Direct Burning Power Plant Project	Investment Analysis	8%
0825	Henan Luyi 25MW Biomass Cogeneration Project	Investment Analysis	8%
1032	Shandong Shanxian 1*25MW Biomass Power Plant Project	Investment Analysis	8%
1263	Shandong Wudi Biomass Generation Project	Investment Analysis	8%
1293	Heilongjiang Tangyuan Biomass Cogeneration Project	Investment Analysis	8%
1366	Biomass generation project, in Sheyang county, Jiangsu province, P.R. China	Investment Analysis	8%
1375	Shandong Gaotang 30MW Biomass Power Generation Project	Investment Analysis	8%
1892	Jiangsu Longyuan Donghai Biomass Power Project	Investment Analysis	8%
2230	Jiangsu Rudong Biomass Power Generation Project	Investment Analysis	8%
2440	Anhui Anqing 30MW Biomass Power Generation Project	Investment Analysis	8%
2561	Heilongjiang Wangkui 50MW Level Biomass Cogeneration Project	Barrier Analysis	N/A
2563	Jilin Liaoyuan 50MW Level Biomass Cogeneration Project	Barrier Analysis	N/A

The audit team has reviewed the sensitivity analysis by the PPs. There are totally seven parameters included in the analysis: Total static investment, Biomass price, Annual O&M costs, Grid-in tariff, Annual grid-in electricity, Heat price and Annual steam output. It is thought to be complete according to the "Guidance on the Assessment of Investment Analysis" (version 03).

A -10%~+10% variation range is adopted for all these variables; the selection of 10% variation range is verified to be consistent with the "Guidance on the Assessment of Investment Analysis" (version 03). It is demonstrated that the proposed project (without CDM revenue) remains economically unattractive within a reasonable range.

For the **total static investment** (225.17 Mio RMB), when it has a decrease of 10%, the IRR is 7.76% which is still below the benchmark of 8%. However, it was further confirmed by the General Construction Contract (IRL 21) signed between the PP and Wuhan Environmental Protection Engineering Technology Co., Ltd, an independent third party on 08 May 2008, the actual total invest-

ments are already 230 Mio RMB. Furthermore, the project IRR would reach the benchmark, if the total static investment decreases by 11.4%. As the proposed project has been put into operation on 09 March 2010, it is impossible for total static investment to decrease by 11.4%. Hence, the descriptions in PDD are reasonable and can be justified.

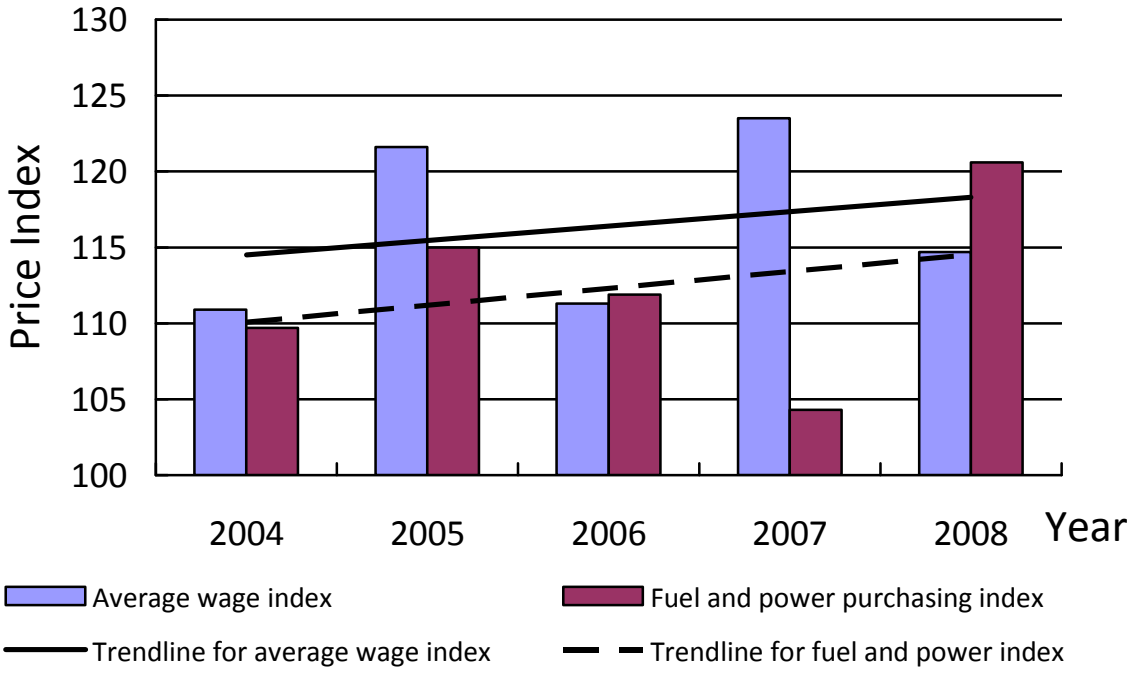
For the **biomass price** (232.8 RMB/t) mentioned in FSR, when it decreases by 10%, the IRR rises to 8.88%, over the benchmark of 8%. Alternatively, the project IRR would reach the benchmark of 8% if the biomass price decreases by 6.43%. However, according to the latest biomass purchase agreement (IRL 68) signed between the PP and the biomass suppliers in August, 2009, the biomass price ranges from 265 to 280 RMB/ton based on the type of biomass, please refer to Table 3. The purchase prices for all three types of biomass are much higher than the estimated value (232.8 RMB/t) in the FSR.

Table 3 Purchase price for different type of biomass

Biomass Type	Biomass Characteristics	Purchase Price (RMB/ton)
Rape stalk	Pieces/Package	265
Cotton stalk	Pieces/Package	270
Rice straw	Pieces/Package	280

As mentioned justifications in the PDD, the expected price of biomass is determined based on the actual cost for collection, transportation, handling and storage, pre-treatment of the biomass. It has been consistent with the conclusions in the research paper of Renewable Energy Resources, a Chinese journal (IRL 67).

Figure 1 Statistics Indexes in Hubei Province (Preceding year = 100)



In addition, the cost which influences biomass price, is associated with the fuel and power consumption, as well as the labor cost in the project activity. From 2004 to 2008, the average wages index of the Hubei Province and the fuel and power purchasing index (IRL 76) are listed in Figure 1 as above. Both indexes clearly show that an upward trend over last five years. Therefore, the audit team could confirm that the biomass price drop by 6.43% will be impossible in the future.

For the **annual O&M costs** (70.73 Mio RMB), when it decreases by 10%, the IRR rises to 9.61%, over the benchmark of 8%. Alternatively, the project IRR would reach the benchmark of 8% if the annual O&M costs only decrease by 4.9%. However, the chance for O&M costs drop is deemed to be unrealistic in the real world.

The annual O&M costs are 70.73 Mio RMB in the FSR, and composed of the following parts in Table 5.

Table 5 Breakdown of the annual O&M cost

Breakdown	Estimated Cost in the FSR (Mio RMB)	Percentage
Power cost	2.0340	2.88%
Water cost	0.3588	0.51%
30% Sodium hydroxide (NaOH), 30% Hydrochloric acid (HCl) and compressed air cost	0.9274	1.31%
Biomass cost	53.8473	76.13%
Other material cost	0.78	1.10%
Salary & welfare cost	6.2771	8.87%
Repair cost	4.5367	6.41%
Other cost	1.9725	2.79%
Total	**70.73**	**100%**

It can be seen that the sum of biomass cost, salary & welfare is contributed 85% of the annual O&M costs in the FSR. Considering the proposed project was put into opertion since this March, 2010. The audit team has asked the PPs to provide the actual cost as much as possible for the further cross-checking.

a) As for the biomass cost, the actual biomass consumption by the boilers is derived from the logbook of electronic belts (IRL 69), and the electricity generated from 9 March 2010 to 31 October 2010 can be crosschecked by the electricity transaction notes (IRL 71). Because the biomass consumption is relevant to the electricity generation directly, they are shown in Table 6 as follows:

Table 6 Operation records of the proposed project

Period	Started 09 March	April	May	June	July	August	Septemb er	October	Total
Biomass Consumption	9405.48	10,614.89	10,774.8	8,846.8	9,599.03	17,128.32	13,958.76	14,063.22	94,391.3

(ton)									
Electricity generated (10000kWh)	338.868	730.857	669.771	573.408	650.832	988.764	813.486	762.489	5528.475
Heat (GJ)	0	0	0	0	0	0	0	0	0

As mentioned in the biomass price anaylsis, the actual purchase prices were much higher than that estimated one in the FSR. Even if the lowest actual biomass price (265 RMB/t) in the biomass purchase agreement (IRL 68) was used to calculate the biomass cost from 9 March 2010 to 31 October 2010, the biomass cost during this period was around 25.01 Mio RMB[5].

As the biomass consumption is relevant to the electricty generation, the actual biomass consumption cost per kWh is calculated as 0.452 RMB/kWh[6] in conservtive manner, which is already higher than the value calculated from FSR i.e. 0.345 RMB/kWh[7]. In the sensitivity analysis, supposed that the same amount of annual electricity generation of 156,000MWh in the FSR is to be generated in the project activities, the biomass consumption cost would be about 70.51 Mio RMB[8].

b) As for salary & welfare cost, the PP also provided the actual cost in the last year, please refer to the Table 7 for the detailed information. According to the Figure 1, the salary index is ever-growing over the recent years. However, the PP has fixed the salary & welfare cost in a conservative manner for the following comparison.

Table 7 Salary and welfare of the proposed project

Parameter	Value in FSR/IRR Spreadsheet	Value compared	Information source
Salary and welfares	30000 RMB per staff 138 staff	The staff salary in the plant is 30,000 RMB per staff, totally 145 staff	The Statement from the PP on 12 Nov, 2010 (IRL 72)
	Walfare fund: 14% 138 staff	Welfare fund: 14%	*Technical Requirements for Cogeneration Feasibility Study* issued by State Development Planning Commission, State Economic and Trade Commission and Ministry of Construction on 01 Nov 2001 (IRL 48)
	Labour insurances	Pension insurance: 20%	http://www.hubei.gov.cn/zwgk/zfxxgk/zfwj/ezfwj/ezf2009/201001/t20100113_111368.shtml

[5] Equal to 265 RMB/ton×94,391.3ton

[6] Equal to 265 RMB/ton×94,391.3ton / 55284.75MWh

[7] Equal to 232.8 RMB/ton×231,303ton / 156,000MWh

[8] Equal to 0.452 RMB/kWh×156,000MWh

	33% 138 staff	Unemployment insurance: 2%	http://www.hbxfjob.com/employment/deploy/zcfg/news/200901/20090109153854219.html
		Medical insurance: 6%	http://www.hbaudit.gov.cn/html/2007/0430/2417.htm
		Housing fund: 5%	http://www.chinacourt.org/flwk/show1.php?file_id=99058
	Total is 6.2771 Mio RMB	Total is 6.5954 Mio RMB	

There are only actual biomass consumption, electricity generation and salary & welfare available at this moment because the proposed project operated only 10 months. Based on the above analysis, the audit team assumes each unavailable breakdown value of annual O&M cost as zero in the conservative principle. Among them, biomass cost, salary & welfare cost which contribute 85% of annual O&M cost, have been analized carefully. Please refer to the Table 8 to see the comparision between the FSR and actual cost calculated based on the operational records from 9 March to 31 October, 2010.

Table 8 Comparision of Annual O&M cost

	Estimated O&M Cost in the FSR (Mio RMB)	Comparable O&M cost (Mio RMB)	Remarks
Power cost	2.0340	N/A	To be considered as 0 in conservative way
Water cost	0.3588	N/A	To be considered as 0 in conservative way
30%NaOH, 30%HCL and compressed air cost	0.9274	N/A	To be considered as 0 in conservative way
Biomass cost	53.8473	70.51	The actual biomass consumption cost per kWh is 0.452 RMB/kWh in conservtive manner, supposed that the same amount of annual electricity generation of 156,000MWh in the FSR is to be generated in the project activities, the biomass consumption cost would be about 70.51 Mio RMB.
Other material cost	0.78	N/A	To be considered as 0 in conservative way

Salary & welfare cost	6.2771	6.5954	The actual salary & walfare cost calculated as, 145 staff×30,000yuan/staff×(1+14%)×(1+33%) =6.5954 Mio RMB.(IRL 48)
Repair cost	4.5367	N/A	To be considered as 0 in conservative way
Other cost	1.9725	N/A	To be considered as 0 in conservative way
Total	**70.73**	**77.10**	

From the comparision, it is known that even the comparable sum from 85% components of annual O&M cost, was over the estimated value in the FSR, not mentioned to consider each actual breakdown value of annual O&M cost.

In summary, the audit team confirms that these assumed O&M costs in the FSR and the PDD is in compliance with the regulation of economic evaluation and the real situation in China. Therefore, the chance for O&M costs drop is deemed to be unlikely.

For the **grid-in tariff**, when it increases of 10%, the IRR rises to 9.58%, over the benchmark of 8%. Alternatively, the project IRR would reach the benchmark of 8% if the grid-in tariff increases 5.02%. The tariff assumed in the FSR is 0.5265 RMB/kWh (excl. VAT) within 15 years, and 0.3128 RMB/kWh (excl. VAT) for the following years (IRL 51), identical to the tariff approval issued by Hubei Province Price Bureau in April 2008 (IRL 20). Furthermore, the audit team reviewed the monthly electricity sale invoices (IRL 70) since the operation of the proposed project started on 09 March 2010, indicated that the grid-in tariff is 0. 5265 RMB/kWh (excl. VAT), which is consistent with the approved tariff. Thus, 5% increase of grid-in tariff is thought to be unlikely.

For the **annual grid-in electricity**, when it has an increase of 10%, the IRR will be reached to 9.47%, over the benchmark of 8%. Alternatively, the project IRR would reach the benchmark of 8% if the annual electricity output increases 5.23%. However, according to the actual electricity output (grid-in electricity and self consumption electricity) from 09 March 2010 to 31 October 2010 (total in 237 days), was 55,284.75 MWh (Table 6). Among it, the grid-in electricity is 46,284.462 MWh, as indicated in the monthly electricity sale invoices (IRL 70) and electricity transaction notes (IRL 71), much lower than the designed value (92,176 MWh). The expected annual grid-in electricity output in the PDD of 141,960 MWh is extrapolated to the time of 237 days, which amounts to 92,176 MWh. As for the self consumption electricity is calculated as 9,000.288 MWh, thus the actual self-consumption rate is 16.28%[9], higher than 9% estimated in the FSR.

Therefore, from the actual electricity output of the proposed project, even a 5.23% increase in the annual grid-in electricity is thought to be unlikely.

For the **heat price**, when it has an increase of 15.1%, the IRR will reach to the benchmark of 8%. Firstly, there is not any official heat price available in Hubei Province because most of the biomass cogeneration projects is still not fully operated, in particularly for the heat supply. Moreover, the latest available heat price statistics of all the similar biomass projects in Hubei Province below (Table 1)

[9] Equal to 9,000.288 MWh/55,284.75MWh×100%

was further reviewed. It is showed that the price of the proposed project is estimated the most optimistically among of the similar projects.

In addition, a levelized cost analysis was successfully introduced by the registered project (Ref. 3044)[10] in the same region, Hubei Province, in order to provide additional substantiation to the reasonable heat price applied in the investment analysis, to show whether or not it is feasible to purchase heat from the proposed project from the heat users' point of view. As a result, it was calculated that "the levelized cost of a coal fired boiler for the heat users to supply heat to themselves independently is 31.5RMB/GJ" (IRL 74). Thus, the expected heat price of 43.8 RMB/GJ in the FSR is much higher than 31.5RMB/GJ, which means the existing heat users would like to continue to run their own small coal-fired boilers to meet their heat demand, rather than use the heat supply from the proposed project. In this way, only when the heat price tends to lower down to the levelized cost (31.5RMB/GJ) or less, will the proposed project make sense for the surrounding heat users.

While considering the heat price is strictly regulated by the local government (IRL 75), the audit team could confirm that 15.1% increase is thought to be unrealistic. Even there is 10% increase in the heat price, the IRR will be 7.4%, still below the benchmark of 8%.

For the **annual steam output**, when it has an increase of 15.1%, the IRR will reach to the benchmark of 8%. Because the heat supply network is still pending for the proposed project, there is no actual steam output available at present.

Supposed the proposed project will be implemented in the future, according to the FSR and Explanation about Annual Steam Generation *o*f Yicheng Biomass Cogeneration Project in Hubei Province issued by China City Environment Protection Engineering Limited Company, a qualified third party, on 21 October 2009 (IRL 60), the theoretical maximum value of annual steam could be calculated as:

Annual heat supply = the enthalpy of the steam for heat supply × the average steam output from boiler per hour × annual operation hours × the adjusted rate for heat supply

= 2963.58 kJ/kg × 25 t/h × 6500 h ×1.1 = 529,740GJ

It also mentioned that the actual annual steam supply would not be more than the theoretical maximum value. The audit team has validated the calculation and data source, and found

1, The calculation and statement was provided by China City Environment Protection Engineering Limited Company, a qualified third party in China;

2, The maximum theoretical value calculation was not considered the recovery of the condensate water after heat supply, enthalpy amendment and the efficiency of the heat network, etc;

3, The operation hours are designed value as well. In fact, the audit team compares the proposed project with all the other five biomass projects in Hubei Province in Table 1. The operation hours of the proposed project are higher than the rest of them. It can be seen that 6500h for the proposed project is conservative;

4, the Factor 1.1 is redundant coefficient from a conservative view.

[10] http://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1256015812.95/view

Therefore, the audit team confirms that a 15.1% increase is deemed to be unrealistic. Even there is 10% increase on annual steam output, the IRR will be 7.4%, still below the benchmark of 8%.

In summary, on the basis of its specific local and sectoral expertise, the validation team can confirm that the sensitivity analysis has been performed in a transparent manner. The submitted excel spreadsheets have the readable formulae and unprotected cells, which allows the assessment team to be able to reproduce the analysis and obtain the same results. TÜV SÜD can confirm that the underlying assumptions, parameters and chosen values are appropriate and that the calculations have been performed correctly.

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 of financial analysis are correct.

3.6.4 Barrier analysis

There are no identified barriers which can prevent the alternative scenarios to power generation (P1, P4), heat generation (H1, H6) and biomass residues (B1, B3, B4). PDD has selected investment analysis to further determine the feasible baseline scenarios.

3.6.5 Common practice analysis

The region for the common practice analysis has been defined as Hubei province where the proposed project is located. The project activity´s technology can be found in different country regions, where different situations can appear. As a result, the region is defined by taking into account similar technologies as well as similar industry types.

The assessment team has reviewed the approach presented in the PDD and can confirm that relevant parameters such as location, infrastructure, economical situation, and development have been taken into account in order to define the region to be used for the common practice. Therefore, the presented region can be considered appropriate for the common practice analysis.

Based on the installed capacity of the proposed project, a 50% variation on capacities of the similar projects, i.e. 12-36MW is deemed to be reasonable. The operational biomass power generation projects with similar capacity as the proposed project have been listed in Table 5 of chapter B.5 of the PDD, all of which were developed as CDM projects. Furthermore, the assessment team has validated that the proposed project is the first biomass cogeneration project in Hubei province.

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

Parameters determined ex-ante

The following parameters have been determined ex-ante:

- TDL_y The average technical distribution losses rate from power transmission site to power consumption site (use of the default value of 20% stated in Tool to calculate baseline, project and/or leakage emissions from electricity consumption)
- $EF_{CH4,BF}$ CH_4 emission factor for the combustion of biomass residues in the project plant(use of the default value of 30 $kgCH_4/TJ$ defined in Table 4 of the methodology ACM0006 version 10, the conservativeness factor is 1.37))
- EF_{CM} CO_2 baseline emission factor (calculated as 0.99695 tCO_2/MWh based on the published OM and BM values by NDRC, which are the latest available data at the commencement of validation)
- GWP_{CH4} Global Warming Potential for methane valid for the relevant commitment period (use of IPCC default value of 21 tCO_{2e}/tCH_4)

Parameters monitored ex-post

The following parameters will be monitored:

- **Monitoring the project emissions from transportation of biomass residues**
  - N_y Number of truck trips for the transportation of biomass (Option 1 is chosen to estimate Co_2 emissions from transportation. The PPs select Ny instead of TLy as the monitoring parameter. Ny will be monitored continuously and cross-checked with the quantity of the biomass combusted)
  - AVD_y Average round trip distance (from and to) between biomass fuel supply sites and the project site (monitored continuously and cross-checked with other sources (e.g. maps))
  - $EF_{km,CO2,y}$ Average CO_2 emission factor for the trucks during the year y (use of the value from the literature in a conservative manner (i.e. the higher end within a plausible range). The monitoring frequency is at least annually)
- **Monitoring the project emissions from on-site consumption of fossil fuels**
  - $FF_{project\ plant,i,y}$ Quantity of fossil fuel diesel combusted in the project plant during the year y(measured by weight meters continuously and cross-checked with an energy balance based on purchased quantities and stock changes)
  - NCVi Net calorific value of the fossil fuel diesel (monitored annually, use accurate and reliable local or national data and cross check with default values by IPCC)
  - $EF_{CO2,FF,y}$ CO_2 emission factor for fossil fuel diesel (monitored annually, use of accurate and reliable local or national data where available. If such data is not available, use of IPCC default value. A conservative value will be chosen and the PP will justify the choice.)
- **Monitoring CO_2 emissions from electricity consumption ($PE_{EC,y}$)**
  - $EC_{PJ,y}$ On-site electricity consumption attributable to the project activity during the year y (monitored continuously by electricity meters and cross-checked with electricity purchase receipts. The accuracy of the meter is 0.2S and will be calibrated annually.)
- **Monitoring methane emissions from combustion of biomass residues**
  - $BF_{k,y}$ Quantity of biomass residue type k combusted in the project plant during the year y(measured continuously by weight meters with the accuracy of 0.3S and adjusted by the moisture content, crosschecked with the quantity of electricity (and heat) generated and any fuel purchase receipt (if available) as well with an annual energy balance. The weight meter will be calibrated once per year.)

- Moisture content of the biomass residues (measured continuously by moisture analyzer with the accuracy of 0.1S, mean values calculated at least annually. The moisture analyzer will be calibrated once half a year.)
- NCV_k Net calorific value of biomass residue type k (measured based on dry biomass at reputed laboratories at least every six months.)

- **Monitoring emission reductions due to displacement of electricity**

- $EG_{project\ plant,y}$ Net quantity of electricity generated in the project plant during the year y (measured continuously by the electricity meters and cross-checked with electricity sales receipts (if available) and the quantity of fuels fired. The accuracy of the meter is 0.2S and will be calibrated annually.)

- **Monitoring baseline emissions due to natural decay or uncontrolled burning of anthropogenic sources of biomass residues**

- NCV_k Net calorific value of biomass residue type k (measured based on dry biomass at reputed laboratories at least every six months)
- $EF_{buring,\ CH4,k,y}$ CH_4 emission factor for uncontrolled burning of the biomass residue type k during the year y (monitored annually, use of IPCC default value)

- **Monitoring the project leakage**

- $BF_{utilized,k,y}$ Quantity of biomass residues of type k that are utilized in the defined geographical region(monitoring the statistics, annually)
- $BF_{available,k,y}$ Quantity of biomass residues of type k in the region(monitoring the statistics, annually)

The procedures have been reviewed by the assessment team through document review; this information 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 data management and in general the quality assurance and quality control procedures to be implemented in the context of the project. 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 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 official website of Yicheng Government since 6 June 2007 (IRL 57). In addition, a special CDM stakeholder meeting was held in October 2007 (IRL 15) and relevant questionnaires were taken from May to June of 2007 and from January to February of 2008 respectively (IRL 56, IRL 58). The assessment team has reviewed the documentation in order to validate the inclusion of relevant stakeholders. Local experts confirmed that the communication method used to invite the stakeholders was considered appropriate. The summary of comments presented in the PDD has been verified with the documentation of the stakeholder consultation and is found to be complete.

Comments presented by the local stakeholders have been taken into account by the PPs. This has also been verified with information obtained during interviews.

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

3.10 Environmental impacts

The project participants ordered Hubei Environmental Sciences Research Institute to undertake an environmental impact assessment. The assessment team reviewed the documentation of the presented information. The IRL 12 EIA report and IRL 13 Approval of EIA report confirm the correctness of the approach used by the PPs. We conclude that the PPs followed the requirements of the host country in regards to environmental impacts.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

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

The following table presents all gathered key information:

webpage: https://cdm.unfccc.int/Projects/Validation/DB/8J8WAZ0YD76CKQWT0XB7XXJP2RMTIS/view.html	
Starting date of the global stakeholder consultation process: 2008-09-25	
Comment submitted by: None	**Issues raised:** -
Response by TÜV SÜD: -	

5 VALIDATION OPINION

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

Yicheng Biomass Cogeneration Project in Hubei Province, China

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

The review of the project design documentation, subsequent follow-up interviews and further verification of references have provided TÜV SÜD with sufficient evidence to determine the fulfilment of stated criteria in the protocol. In our opinion, the project meets all relevant UNFCCC requirements for the CDM. Therefore, 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 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, as well as the engagement conditions detailed in this report. The validation has been performed following the VVM requirements. The single purpose of this report is its use during the registration process as part of the CDM project cycle. TÜV SÜD can therefore not be held liable by any party for decisions made, or not made, based on the validation opinion beyond that purpose.

Munich, 26-11-2010

Rachel Zhang

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

Beijing, 26-11-2010

Xiaoyan Liu

Assessment Team Leader

Industrie Service

Annex 1: Validation Protocol

Industrie Service

Table 1 Conformity of Project Activity and PDD

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
A. General description of project activity					
A.1. Title of the project activity					
A.1.1.	Does the used project title clearly enable to identify the unique CDM activity?	1,2	The project is titled with the name of the project location, and the energy source of the project. Hence, it can be clearly identified.	☑	☑
A.1.2.	Are there any indication concerning the revision number and the date of the revision?	1,2	The available PDD is indicated as version 01, dated 05/09/2008.	☑	☑
A.1.3.	Is this consistent with the time line of the project's history?	1,2	Yes. The GSP was started with this version.	☑	☑
A.2. Description of the project activity					
A.2.1.	Is the description delivering a transparent overview of the project activities?	1,2	The project activities have been described transparently, the proposed project involves two 75 t/h biomass direct burning boilers and two 12 MW steam turbine generators. The equipment contracts have been proved by the auditor. **Corrective Action Request No.1.** 1. According to PDD Guideline of EB41, project participants are requested to state what scenario was existing prior to the implementation of the project activity and discuss the baseline scenario and project scenario.(e.g. is the baseline scenario as same as the scenario existing prior to the start of implementation of the project activity?) 2. Please update the version of PDD Form to version 3.	CAR	☑
A.2.2.	What proofs are available demonstrating that the project description is in compliance with the actual situation or planning?	1,2 10 11 12	During auditing and interviewing with the projects owner several evidences (see in the following) for the given project activity have been gathered - EIA report and EIA Approval	CAR	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
		13	- Feasibility Study Report and Project Approval from Gansu DRC **Corrective Action Request No.2.** Project participants are requested to deliver the approval of Connection System to the DOE.		
A.2.3.	Is the information provided by these proofs consistent with the information provided by the PDD?	1,2	There is no contradiction between the information provided by these proofs and the PDD. But see A2.1	See CAR	☑
A.2.4.	Is all information presented consistent with details provided by further chapters of the PDD?	1,2	Yes, but see A2.1	See CAR	☑
A.3. Project participants					
A.3.1.	Is the form required for the indication of project participants correctly applied?	1,2	The form is correctly applied Anneng (Yicheng) Biomass Thermo-Electricity Co. Ltd and Emissionshandels Gesellschaft Bavaria GmbH are the project participants of the project.	☑	☑
A.3.2.	Is the participation of the listed entities or Parties confirmed by each one of them?	1,2 32 33 34	**Open Issue** Pls. deliver the LoA issued by China and the Germany together with the MoC countersigned by both parties to the DOE before raising the request of registration.	Open Issue	☑
A.3.3.	Is all information on participants / Parties provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	1,2	Yes. Information on project participants is in consistency with details provided by further chapters of the PDD	☑	☑
A.4. Technical description of the project activity					
A.4.1.	*Location of the project activity*				
A.4.1.1.	Does the information provided on the lo-	1,2	The project location could be identified according to the PDD. The	CAR	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
	cation of the project activity allow for a clear identification of the site(s)?		project is located in Yicheng City Hubei Province, 37 km away from Xiangfan and 332 km away from Wuhan, the capital of Hubei Province. However, it is not clear from which place the GPS coordinates were taken. **Corrective Action Request No.3.** The PDD should clearly inform from which place the GPS coordinates were taken.		
A.4.1.2.	How is it ensured and/or demonstrated, that the project proponents can implement the project at this site (ownership, licenses, contracts etc.)?	1,2 11 13 24	The project approval issued by Hubei development and reform commission and the EIA approval issued by Hubei EPB demonstrated that the project proponent can implement the project at this site	☑	☑
A.4.2.	*Category(ies) of project activity*				
A.4.2.1.	To which category(ies) does the project activity belonging to? Is the category correctly identified and indicated?	1,2	Yes, the project falls into scope 1. The category is correctly identified and indicated in A.4.2 of the PDD.	☑	☑
A.4.3.	*Technology to be employed by the project activity*				
A.4.3.1.	Does the technical design of the project activity reflect current good practices?	1,2	Yes, the technical design of the project activity reflects current good practice in crediting period.	☑	☑
A.4.3.2.	Does the description of the technology to be applied provide sufficient and transparent input/ information to evaluate its impact on the greenhouse gas balance?	1,2	Yes, the project activity comprises the use of Biomass for electricity generation. There is no doubt that this technology will reduce the GHG emissions significantly.	☑	☑
A.4.3.3.	Does the implementation of the project activity require any technology transfer from annex-I-countries to the host country(ies)?	1,2	No, there is no technology transfer required.	☑	☑
A.4.3.4.	Is the technology implemented by the project activity environmentally safe?	1,2	**Corrective Action Request No.4.** This section should include a description of how environmentally safe the project activity is.	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
A.4.3.5. Is the information provided in compliance with actual situation or planning?	1,2 20	Yes. The main boiler, turbine and generator purchasing contract was reviewed by the auditor, and it is compliance with the planning in the feasibility study. **Corrective Action Request No.5.** 1. The parameters of boiler, turbine and generator should be consistent with the equipment contract. 2. A detailed description of the baseline scenario and the scenario existing prior to the start of the implementation of the project activity shall be included into section A.4.3 of the PDD. 3. Please also clearly present the pre-treatment process of the biomass residues prior to their combustion. 4. Based on latest PDD guideline (version 7), the description of the scenarios should include, inter alia: - The information about the age and average lifetime of the equipments based on manufacturer's specifications and industry standards, load factors and efficiencies. - The emissions sources and the greenhouse gases involved in the project activity and existing and forecast energy and mass flows and balances of the systems and equipments included in the project activity shall be included. - The description should clearly explain how the same types and levels of services provided by the project activity would have been provided in the baseline scenario.	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
A.4.3.6. Does the project use state of the art technology and / or does the technology result in a significantly better performance than any commonly used technologies in the host country?	1,2	The common practice for electricity generation is still coal-fired power plant. Hence, the project definitely would result in a better performance than the common practice.	☑	☑
A.4.3.7. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1,2	The life cycle of a biomass equipment is under normal circumstances longer than the project period.	☑	☑
A.4.3.8. Does the project require extensive initial training and maintenance efforts in order to be carried out as scheduled during the project period?	1,2	**Clarification Request No. 1.** The training program has been prepared by project owner, please deliver the related document to DOE when the program is finished.	CR	☑
A.4.3.9. Is information available on the demand and requirements for training and maintenance?	1,2	See A4.3.8	☑	☑
A.4.3.10. Is a schedule available for the implementation of the project and are there any risks for delays?	1,2	The project will be put into test operation at the end of 2009, there is no risk for delay. The implementation schedule has been described in B5.	☑	☑
A.4.4. Estimated amount of emission reductions over the chosen crediting period				
A.4.4.1. Is the form required for the indication of projected emission reductions correctly applied?	1,2	Yes. The form is correctly applied according to the version 3 of the PDD template.	☑	☑
A.4.4.2. Are the figures provided consistent with other data presented in the PDD?	1,2	Yes, The figures provided are consistent with other data presented in the PDD.	☑	☑
A.4.5. Public funding of the project activity				
A.4.5.1. Is the information provided on public funding provided in compliance with the actual	1,2	Yes. There is no public funding necessary; all costs are covered	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
	situation or planning as available by the project participants?		by bank loans and private equity.		
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	The statement is consistent within the PDD.	☑	☑
B. Application of a baseline and monitoring methodology					
B.1. Title and reference of the approved baseline and monitoring methodology					
B.1.1.	Are reference number, version number, and title of the baseline and monitoring methodology clearly indicated?	1,2 3,4 5,6 7	**Corrective Action Request No.6.** According to EB48, Annex 60 regarding the validity of the applied meth/version adopted in the proposed project during incomplete-ness check by EB, please update the latest version of meth/version into the PDD. Yes, ACM0006 (version 10) has been applied and the reference is clearly indicated. In addition, the following tools were used: ACM0002: "Consolidated baseline and monitoring methodology for grid-connected electricity generation from renewable sources" (Version 11); "Tool to calculate the emission factor for an electricity system" (version 2); "Combined tool to identify the baseline scenario and demonstrate additionality" (Version 02.2); Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion (version 02); "Tool to calculate baseline, project and/or leakage emissions from electricity consumption" (version 01, EB39).	CAR	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
B.1.2.	Is the applied version the most recent one and / or is this version still applicable?	1,2 3,4 5,6 7	Yes, based on the GSP-PDD version it is.	☑	☑
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	Yes. The approved methodology ACM0006 is exactly applicable to the biomass project.	☑	☑
B.2.2.	Is the project activity clear according to the PDD?	1,2	Applicability checklist / Yes / No Power-only project? / No Greenfield project? / Yes Power capacity expansion project? / No Energy efficiency improvement project? / No Fuel switch project? / No	☑	☑
B.2.3.	Applicability Criterion 1: No other biomass types than biomass residues are used and these residues are the predominant fuel.	1,2	Applicability checklist / Yes / No Criterion discussed in the PDD? / Yes Compliance provable? / Yes Evidences provided in the PDD? / Yes Compliance verified? / Yes No other biomass types than agricultural biomass residues are used in the project plant and these residues are the predominant fuel. The same has been confirmed by FSR (IRL 10), Project Approval (IRL 11) and verified during on-site audit The project will use dry biomass to start-up the boiler, instead of fossil fuel which has been confirmed by Explanation and Clarification for the Start-up way of the boiler provided by boiler provider	☑	☑

<table>
<tr><th colspan="2">CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PDD in GSP</th><th>Final PDD</th></tr>
<tr><td colspan="2"></td><td></td><td>(China Western Power Industrial Co., Ltd) and FSR design organization (China City Environment Protection Engineering Limited Company) respectively (IRL 29).</td><td></td><td></td></tr>
<tr><td>B.2.4.</td><td>Criterion 2:
For projects that use biomass residues from a production process (e.g. production of sugar or wood panel boards), the implementation of the project shall not result in an increase of the processing capacity of raw input (e.g. sugar, rice, logs, etc.) or in other substantial changes (e.g. product change) in this process</td><td>1,2</td><td><table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Evidences provided in the PDD?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table>
The biomass residues used by the project plant are all from the agriculture, but not from any production process, which has been confirmed by FSR (IRL 10), Project Approval (IRL 11) and verified during on-site audit</td><td>☑</td><td>☑</td></tr>
<tr><td>B.2.5.</td><td>Criterion 3:
The biomass residues used by the project facility should not be stored for more than one year;</td><td>1,2</td><td><table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Evidences provided in the PDD?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table>
The biomass residues used by the project plant will not be stored for more than one year, which has been verified by the capacity of the storage system indicated in the FSR (IRL 10) and confirmed during on-site visit.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.2.6.</td><td>Criterion 4:
No significant energy quantities, except from transportation or mechanical treatment of the biomass residues, are required to prepare the biomass residues for</td><td>1,2</td><td><table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Evidences provided in the PDD?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
fuel combustion		Compliance verified? Yes There is no significant energy quantities, except from transportation or mechanical treatment of the biomass residues. The mechanical treatment refers to breaking and feeding within the project site. The audit team has reviewed the FSR(IRL 10) and Layout of the power plant (IRL 36) and can confirmed the above information. These two parts of energy consumption will be monitored during verification as mentioned in chapter B.7.1 of the PDD.		
B.3. Description of the sources and gases included in the project boundary				
B.3.1. Source: Grid electricity generation Gas(es): CO_2 Type: Baseline Emissions	1,2	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: Heat generation Gas(es): CO_2 Type: Baseline Emissions	1,2	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.3.3. Source: Uncontrolled burning or decay of surplus biomass residues	1,2	Boundary checklist: Yes / No Source and gas(es) discussed in the PDD? Yes	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
Gas(es): CH_4 Type: Baseline Emissions		Inclusion / exclusion justified? Yes Explanation / Justification sufficient? Yes Consistency with monitoring plan? Yes		
B.3.4. Source: On-site fossil fuel or electricity consumption Gas(es): CO_2 Type: Project Emissions	1,2	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.3.5. Source: Off-site transportation of biomass residues Gas(es): CO_2 Type: Project Emissions	1,2	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.3.6. Source: Combustion of biomass residues Gas(es): CH_4 Type: Project Emissions	1,2	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.3.7. Source: Waste water from the treatment of	1,2	Boundary checklist / Yes / No	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
biomass residues Gas(es): CH_4 Type: Project emissions		Source and gas(es) discussed in the PDD? Yes Inclusion / exclusion justified? Yes Explanation / Justification sufficient? Yes Consistency with monitoring plan? Yes		
B.3.8. Is the spatial extension of project boundary clear described?	1,2	**Corrective Action Request No. 7** 1. The emission sources should be discussed project specifically and not simply copied from the methodology, i.e. PP should clearly document their choice in the PDD, instead of using the wording "maybe", "included or excluded" etc. 2. According to latest PDD guideline (version 7), please present a flow diagram of the project boundary, physically delineating the project activity. Include in the flow diagram all the equipments, systems and flows of mass and energy described in section A.4.3. Particularly, represent in the diagram the emissions sources and gases included in the project boundary and the monitoring variables. 3. Please redefine the project boundary since the PP doesn't claim the emissions reductions from heat displacement of the proposed project.	CAR	☑
B.3.9. Do the spatial and technological boundaries as verified on-site comply with the discussion provided by / indication included to the PDD?	1,2	See B3.8	☑	☑
B.4. Description of how the baseline scenario is identified and description of the identified baseline scenario				
B.4.1. Are biomass residues from different sources considered as different types of biomass residues? Are biomass residues with different uses in the absence of the	1,2	**Corrective Action Request No. 8** Please clearly explain in the PDD if the project uses the different types of biomass residues, preferably using a table	CAR	☑

<table>
<tr><th colspan="2">CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PDD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td>project activity considered as different types of biomass residues k.? Does the PDD document for each type of biomass residues which quantities are used in which installations under the project activity and how these types and quantities of biomass residue would be used in the absence of the project activity, preferably using a table?</td><td></td><td></td><td></td><td></td></tr>
<tr><td>B.4.2.</td><td>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?</td><td>1,2</td><td>Realistic and credible alternatives should be determined:<table><tr><th>Completely discussed and reasoned in PDD?</th><th>Yes / No</th></tr><tr><td>how power would be generated in the absence of the CDM project activity;</td><td>Yes</td></tr><tr><td>what would happen to the biomass residues in the absence of the project activity; and</td><td>Yes</td></tr><tr><td>in case of cogeneration projects: how the heat would be generated in the absence of the project activity</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.4.3.</td><td>Is the project activity categorized and is that retraceable?</td><td>1,2</td><td>For power generation, the realistic and credible alternatives may include<table><tr><th colspan="2">Categories</th><th>Yes / No</th></tr><tr><td>P1</td><td>The proposed project activity not undertaken as a CDM project activity</td><td>Yes</td></tr></table></td><td>See CAR</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS			PDD in GSP	Final PDD
		P2	The continuation of power generation in an existing biomass residue fired power and heat plant at the project site, in the same configuration, without retrofitting and fired with the same type of biomass residues as (co-)fired in the project activity	No		
		P3	The generation of power in an existing captive power and heat plant, using only fossil fuels	No		
		P4	The generation of power in the grid	Yes		
		P5	The installation of a **new** biomass residue fired power and heat plant fired with the same type and with the same annual amount of biomass residues as the project activity, but with a lower efficiency of electricity generation (e.g. an efficiency that is common practice in the relevant industry sector) than the project plant and therefore with a lower power output than in the project case.	No		
		P6	The installation of a **new** biomass residue fired power and heat plant that is fired with the same type but with a higher annual amount of biomass residues as the project activity and that has a lower efficiency of electricity generation (e.g. an efficiency that is common practice in the relevant industry sector) than the project activity. Therefore, the power output is the same as in the project case.	No		

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS			PDD in GSP	Final PDD
		P7	The retrofitting of an existing biomass residue fired power and heat plant, fired with the same type and with the same annual amount of biomas residues as the project activity, but with a lower efficiency of electricity generation (e.g. an efficiency that is common practice in the relevant industry sector) than the project plant and therefore with a lower power output than in the project case.	No		
		P8	The retrofitting of an existing biomass residue fired power and heat plant that is fired with the same type but with a higher annual amount of biomass residues as the project activity and that has a lower efficiency of electricity generation (e.g. an efficiency that is common practice in the relevant industry sector) than the project activity.	No		
		P9	The installation of a **new** fossil fuel fired captive power and heat plant at the project site.	Yes		
		P10	The installation of a new single- (using only biomass residues) or co-fired (using a mix of biomass residues and fossil fuels) cogeneration plant with the same rated power capacity as the project activity power and heat plant, but that is fired with a different type and/or quantity of fuels (biomass residues and/or fossil fuels). The annual amount of	No		

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

	biomass residue used in the baseline scenario is lower than that used in the project activity.	
P11	The generation of power in an existing fossil fuel fired cogeneration plant co-fired with biomass residues, at the project site.	No

For **heat** generation, realistic and credible alternative(s) may include,

Categories		Yes / No
H1	The proposed project activity not undertaken as a CDM project activity	Yes
H2	The proposed project activity (installation of a power and heat plant), fired with the same type of biomass residues but with a different efficiency of heat generation (e.g. an efficiency that is common practice in the relevant industry sector)	Yes
H3	The generation of heat in an existing captive power and heat plant, using only fossil fuels	No
H4	The generation of heat in boilers using the same type of biomass residues	Yes

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

H5	The continuation of heat generation in an existing biomass residue fired power and heat plant at the project site, in the same configuration, without retrofitting and fired with the same type of biomass residues as in the project activity;, and implementation of the project activity, not undertaken as a CDM project activity, at the end of the life-time of the existing plant	No
H6	The generation of heat in boilers using fossil fuels	Yes
H7	The use of heat from external sources, such as district heat	No
H8	Other heat generation technologies (e.g. heat pumps or solar energy)	No
H9	The installation of a new single- (using only biomass residues) or co-fired (using a mix of biomass residues and fossil fuels) power and heat plant with the same rated power capacity as the project activity power and heat plant, but that is fired with a different type and/or quantity of fuels (biomass residues and/or fossil fuels). The annual amount of biomass residue used in the baseline scenario is lower than that used in the project activity.	No
H10	The generation of power in an existing fossil fuel fired cogeneration plant co-fired with biomass residues, at the project site.	No

For the use of **biomass residues**, the realistic and credible alter-

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native(s) may include, *inter alia*:

Categories		Yes / No
B1	The biomass residues are dumped or left to decay under mainly aerobic conditions. This applies, for example, to dumping and decay of biomass residues on fields.	Yes
B2	The biomass residues are dumped or left to decay under clearly anaerobic conditions. This applies, for example, to deep landfills with more than 5 meters. This does not apply to biomass residues that are stock-piled or left to decay on fields.	No
B3	The biomass residues are burnt in an uncontrolled manner without utilizing it for energy purposes.	Yes
B4	The biomass residues are used for heat and/or electricity generation at the project site	Yes
B5	The biomass residues are used for power generation, including cogeneration, in other existing or new grid-connected power and heat plants	No
B6	The biomass residues are used for heat generation in other existing or new boilers at other sites	No
B7	The biomass residues are used for other energy purposes, such as the generation of biofuels	No
B8	The biomass residues are used for non-energy purposes, e.g. as fertilizer or as feedstock in processes (e.g. in the pulp and paper industry)	No

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
			Please refer to **Corrective Action Request No. 9**		
B.4.4.	In cases where realistic and credible alternative(s) include the installation of **new** power and/or heat generation facilities at the project site – other than the proposed project activity (so called reference plant): Has been identified the economically most attractive technology and fuel type (same service (i.e. the same power and/or heat quantity), technologically available and in compliance with regulations)? In case where several technologies and/or fuel types are available (which are similarly economically attractive): Is the least carbon intensive fuel type / the most efficienct technology considered? Is ensured that the selected technology represents at least the common practice for new biomass residue fired power and heat plants in the respective industry sector in the country or region, excluding CDM registered projects?	1,2	Not applicable. The alternatives of the proposed project are identified as follows: Power generation: P1, P4 Heat generation: H1, H2, H4, H6 Use of biomass residues: B1, B3, B4 But please see B.4.6.	☑	☑
B.4.5.	What kind of scenario combination has been applied according to table 2 of methodology?	1,2	Combination 1(P1+H1+B4) and Combination 2(P4+H6+ (B1+B3)) are the feasible combination baseline scenario of power generation, heat generation, use of biomass residues.	☑	☑
B.4.6.	Does the PDD explain the specific situation of the project activity and demonstrate that the project activity and the most	1,2	The project activity uses biomass residues to generate the electricity and supplied the electricity to CCPG. The biomass residues would in the absence of the project activity be dumped or left to	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
plausible baseline scenario correspond to the "description of the situation" in Table 2 and to the combination of baseline scenarios for power, heat and biomass use?		decay or burnt in an uncontrolled manner without utilizing it for energy purposed. The heat would in the absence of the project activity be generated in boilers fired with fossil fuels. The above situation has been clearly described but it is not clearly explained in the PDD if there are any power and heat generation activities at the project site prior to the implementation of the project activity, please see **Corrective Action Request No. 6** **Corrective Action Request No. 9** **Section B.4 step 1a:** Please add in the PDD the evidences of excluding the alternatives P5, P6, H8, H2, H4 and of reserving B3. Please also transfer these evidences to DOE for further validation It is not clear why the alternatives P5 and P6 are not in line with national guideline of saving energy and reducing emission, but H2 accords, please clarify. It is mentioned "scenario B1/B3/ H6 seems to be a plausible alternative without considering the barriers described in the latter step", are there any barriers for these scenarios? If yes, please present in the PDD. **Section B.4 step 2:** Investment barrier: please add the evidence of financing barriers in the PDD. Technology barrier: the evidence quoted by footnote 6 was issued in 2005, a new recent evidence should be used. Barriers due to lack of prevailing practice: please present the latest biomass project condition of Hubei province and add the evidence into the PDD.		

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
B.4.7.	Does the PDD document: for each power and heat plant that was operating at the project site during the most recent three years prior to the start of the project activity: the type and capacity of the power and heat plant, types and quantities of fuels that have been used in the power and heat plant during the most recent three years prior to the start of the project activity and whether the plant continues operation after the start of the project activity?	1,2	According to the on-site inspection and follow-up interviews, no existing power plant at the project site has been identified.	☑	☑
B.4.8.	Does the PDD document: for each boiler or other heat generation equipment that was operating at the project site during the most recent three years prior to the start of the project activity: the type and capacity of the boiler, types and quantities of fuels have been used in the boiler during the most recent three years prior to the start of the project activity and whether the boiler continues operation after the start of the project activity?	1, 2, 10	Please refer to **Corrective Action Request No. 10**	CAR	☑
B.4.9.	Does the PDD document: for each boiler or power and heat plant installed under the project activity: the type and capacity of boilers and/or power and heat plants and which types and quantities of fuels are planned to be used?	1,2	**Corrective Action Request No. 10** Please state in the PDD for each boiler that was operating at the project site during the most recent three years prior to the start of the project activity: the type and capacity of the boilers, types and quantities of fuels have been used in the boiler during the most recent three years prior to the start of the project activity and whether the boiler continues operation after the start of the project activity? Please state in the PDD for each boiler installed under the project	CAR	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
			activity and in the absence of the project activity: the type and capacity of the new boilers and which types and quantities of fuels would be used? Please state in the PDD for each new boiler or power and heat plant that would be installed in the absence of the project activity: the type and capacity of the new boilers and/or power and heat plants and which types and quantities of fuels would be used?		
B.4.10.	Does the PDD document: for each new boiler or power and heat plant that would be installed in the absence of the project activity: the type and capacity of the new boilers and/or power and heat plants and which types and quantities of fuels would be used?	1,2	Please see **Corrective Action Request No. 10**	See CAR	☑
B.4.11.	Does chosen scenario meet engineered project activity?	1,2	Yes	☑	☑
B.4.12.	Have applicable regulatory or legal requirements been identified?	1,2	Yes.	☑	☑
B.4.13.	Does project identify correctly and excludes those options not in line with regulatory or legal requirements?	1,2	Yes P9 is excluded due to not in line with regulatory and legal requirements.	☑	☑
B.4.14.	In case of scenarios 7, 8, 10, 11, 12, 13, 14, 16, 17 and 22 a power plant was already operated at the project site prior to the implementation of the project activity. In case of scenarios 1, 2, 3, 4, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17 and 20 heat may already have been generated at the project site prior to the implementation of	1,2	Data Checklist / Yes / No Age of each component mentioned? N/A Expected lifetime of each component mentioned? N/A Does the ending date fall in the scheduled crediting period of the project? N/A Evidences clearly referenced? N/A Has this value been verified? N/A	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
	the project activity. Hence, the lifetime and age of baseline components need to be considered.		Choice of data correctly justified? N/A Measurement method correctly described? N/A . The PP has chosen not to claim the baseline emissions from heat displacement since the heat supply network is still pending. This part of requirements is considered not applicable.		
B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity (assessment and demonstration of additionality):					
B.5.1.	If the starting date of the project activity is before the date of validation, is evidence available to prove that incentive from the CDM was seriously considered in the decision to proceed with the project activity?	1,2	Not applicable, the project adopts combined tool to identify the baseline scenario and demonstrate additionality.	☑	☑
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	See B.5.1	☑	☑
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	See B.5.1	☑	☑
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	See B.5.1	☑	☑
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	See B.5.1	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
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	See B.5.1	☑	☑
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	See B.5.1	☑	☑
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	See B.5.1	☑	☑
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	See B.5.1	☑	☑
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	See B.5.1	☑	☑
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	See B.5.1	☑	☑
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	See B.5.1	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
Application of the Combined Tool to identify the baseline scenario and demonstrate additionality (only applicable if all potential alternative scenarios to the proposed project activity are available options to project participants).				
B.5.13. Are the following steps mentioned in the PDD and correctly applied: Step 1: Identification of alternative scenarios Step 2: Barrier analysis Step 3: Investment analysis (if applicable) Step 4: Common practice analysis	1,2 5	There is detailed description regarding the steps in PDD.	☑	☑
B.5.14. Sub-Step 1a): Have all alternative scenarios that are available to the project participants and that provide outputs or services with comparable quality, properties and application areas as the proposed CDM project activity been identified and discussed by the PDD? Why can this list be considered as being complete?	1,2 5	Yes, the list in the PDD covers all alternatives mentioned in the methodology and it can be confirmed by on-site audit and interviews that there are no other possible alternatives out of the list. Hence, the list is considered as being complete.	☑	☑
B.5.15. Sub-Step 1b): Are the alternatives in compliance with all mandatory applicable legal and regulatory requirements?	1,2 5	No, the alternative P9 is not line with the relevant legal and regulatory requirements. The following alternative scenarios were chosen to be in line with the legal and regulatory requirements, but please see CAR9: Power generation: P1, P4 Heat generation: H1, H2, H4, H6 Use of biomass residues: B1, B3, B4	☑	☑
B.5.16. Are those alternative scenarios excluded which are not in compliance with legal and regulatory requirements? If not, it has to be shown that those applicable mandatory legal or regulatory requirements are systematically not enforced and that non-	1,2 5	Yes, according to the legal requirements of “Notice on Banning the Development of thermal generators with capacity under 135 MW from the General Office of the State Council” P9 is excluded.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
compliance with those requirements is widespread in the country.				
B.5.17. Step 2 (Barrier analysis): Is a complete list of barriers developed that prevent the different alternatives to occur?	1,2 5	Not applicable.	☑	☑
B.5.18. Barrier analysis: Is transparent and documented evidence provided on the existence and significance of these barriers?	1,2 5	Not applicable.	☑	☑
B.5.19. Barrier analysis: Are those alternative scenarios eliminated which are prevented by the identified barriers?	1,2 5	Not applicable.	☑	☑
B.5.20. Barrier anlysis: Is a list of alternative scenarios to the project activity that are not prevented by any barrier provided?	1,2 5	Not applicable.	☑	☑
B.5.21. Barrier analysis: Is explained how the registration of the project activity will alleviate the barriers that prevent the poposed project activity from occurring in the absence of the CDM? (only applicable in the following cases): 1. One alternative scenario is not prevented by any barrier, and this alternative is not the proposed project activity undertaken without being registered as a CDM project activity. 2. Several alternative scenarios remain, but do not include the proposed project activity undertaken without being registered as a CDM project activity	1,2 5	Not applicable.	☑	☑
B.5.22. Step 3: Investment analysis (if applicable) : Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit	1,2 5	Yes, the benchmark analysis is applied. The benchmark of 8% evidenced by Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects is adopted, which is considered ap-	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
	ratio, or (levelized) unit cost)?		propriate.		
B.5.23.	Investment analysis: Is the financial indicator calculated for all alternative scenarios remaining after step 2?	1,2 5	The IRR of total investment has been chosen as financial indicator.	☑	☑
B.5.24.	Investment analysis: Is the investment analysis presented in a transparent manner and does the analysis provide all the relevant assumptions?	1,2 5 35	The basic data for the IRR calculation are based on the data from Investment Estimation and Financial Assessment in FSR. The data in IRR spreadsheet are consistent with FSR. **Corrective Action Request No. 11** 1. IRR spreadsheet cannot be accepted without any calculated formula. 2. The IRR value and the values of sensitivity analysis in the PDD are not consistent with the IRR spreadsheets. Please revise. 3. Please add the evidence to support that the operation costs will not decrease more than 9.61% into the PDD. 4. Please add the variation of power output into sensitivity analysis and present the relevant evidences in the PDD. 5. Please provide in section B.5 of the PDD a detailed description of real and continuing actions took by the PP to secure CDM status in parallel with the project implementation, including CDM consulting contract signed, order with DOE signed, etc. Please also clearly indicate the event and the date of the investment decision and the project start. **Clarification Request No. 2.** Please provide the FSR with key contents translation, including the cover page with completion date and complier, basic input da-	CAR CR	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
			ta and IRR cash flow sheet.		
B.5.25.	Investment analysis: Is a clear comparison of the financial indicator for all alternative scenarios done and are the alternative scenarios ranked according to the financial indicator?	1,2 5	The baseline scenario of the proposed project is the Central China Power Grid rather than a similar investment project alternative to the proposed project, so investment comparison analysis method is not appropriate.	☑	☑
B.5.26.	Investment analysis: Is a sensitivity analysis conducted in order to assess whether the conclusion regarding the financial attractiveness is robust to reasonable variations in the critical assumptions?	1,2 5	Yes, but see **Corrective Action Request No. 11** in B.5.23	CAR	☑
B.5.27.	Step 4: Common practice analysis: Have other activities in the host country / region similar to the project activity been identified and are these activities appropriately analyzed by the PDD?	1,2 5	**Corrective Action Request No. 12** 1. Please justify the selection of "similar activities" in the common practice analysis considering that the total capacity of the project activity is 24 MW, which implies that a selection of projects in the range 12 - 36 MW would have been more appropriate. 2. The evidence to show the difference between the proposed project and the similar activity should be clearly presented. If the similar activity is CDM project, please present the relevant linkage from UNFCCC website.	CAR	☑
B.5.28.	Common practice analysis: 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	1,2 5	See **Corrective Action Request No. 12** in B.5.26.	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
B.6. Emissions reductions				
B.6.1. Explanation of methodological choices				
B.6.1.1. Is it explained how the procedures provided in the methodology are applied by the proposed project activity?	1,2	The calculation of the emission reduction is applied according to the steps described in ACM0006 and related tools **Clarification Request No. 3.** 1. Please provide the ER calculation spreadsheets to DOE. Please provide the evidence of $EF_{CO2,BF,heat}$ (89,500 kgCO2/TJ) 2. Please clarify where is option A and option B showed on page 22 of the PDD. 3. In section B.6.3, it is mentioned that the average round trip between the biomass residue supply sites and the project site is 42 kilometers. Please provide the relevant evidence to DOE. According to the methodology, in defining the geographical boundary of the region, PP may consider the farmost distance for biomass residues transportation. 4. Project participants shall assess as part of the monitoring the supply situation for the types of biomass residues used in the project plant. This statement should be added in B.6.1 of the PDD.	CR	☑
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	Yes, the selection of options offered by ACM0006 and related tool are correctly justified which has been verified during the on-site audit.	☑	☑
B.6.1.3. Which conservativeness factor has been chosen and how is this choice justified	1,2	A conservativeness factor of 1.37 has been chosen in calculation of methane emissions from combustion of biomass residues and a conservativeness factor of 0.73 is applied in calculation of baseline emissions due to natural decay or uncontrolled burning of	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		biomass residues. This choice is in line with the methodology.		
B.6.1.4. Are the formulae required for the determination of project emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1,2	Yes, the formulae are correctly presented in chapter B.6.1.	☑	☑
B.6.1.5. Are the formulae required for the determination of baseline emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1,2	Yes, the formulae to calculate the baseline emissions are correctly presented in chapter B.6.1. **Please see Corrective Action Request No. 13**	CAR	☑
B.6.1.6. Are the formulae required for the determination of leakage emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1,2	No leakage is identified ex-ante according to the PDD.	☑	☑
B.6.1.7. Are the formulae required for the determination of emission reductions correctly presented?	1,2	Yes, the formulae required for determination of emission reductions are correctly presented.	☑	☑
Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion (Version 02)				
B.6.1.8. Is the formula required for the determination of CO_2 project emissions from fossil fuel combustion correctly presented, enabling a complete identification of parameter to be used and / or monitored	1,2 6	Yes, the formula is correctly presented	☑	☑
B.6.1.9. Is option A (preferred approach) or option B chosen for the determination of the CO_2 emission coefficient COEFi,y and is COE-	1,2 6	Yes, option B in the Tool is chosen and COEFi,y is correctly determined.	☑	☑

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Fi,y correctly determined?				
Tool to calculate baseline, project emissions and/or leakage emissions from electricity consumption (Version 01)				
B.6.1.10. Do there exist project emissions from electricity consumption by the project activity and if yes is it clear which case (case A, B, C) is applied in the CDM project activity?	1,2 7	Case A has been applied in the CDM project activity.	☑	☑
B.6.1.11. Case A: Is the formula required for the determination of CO2 project emissions from consumption of electricity from the grid correctly presented, enabling a complete identification of parameter to be used and / or monitored	1,2 7	Yes, the formula is clearly presented.	☑	☑
B.6.1.12. Case B: Does the PDD clearly determine which of the four options is chosen?	1,2 7	N/A	☑	☑
B.6.1.13. Is the formula required for the determination of CO2 project emissions from electricity consumption from an off-grid captive power plant correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1,2 7	N/A	☑	☑
B.6.1.14. Case C: Does the PDD clearly determine which of the two options is chosen?	1,2 7	N/A	☑	☑
B.6.1.15. Is the formula required for the determination of CO2 project emissions from electricity consumption from the grid and (a) captive power plant(s) correctly presented, enabling a complete identification of parameter to be used and / or moni-	1,2 7	N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
tored?				
Tool to determine methane emissions avoided from dumping waste at a solid waste disposal site				
B.6.1.16. Is the formula required for the determination of baseline emissions of methane from waste that would in the absence of the project activity be disposed at solid waste disposal sites (SWDS) correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1,2	Not applicable. The baseline scenario for the use of the biomass residues is not that the biomass residues would decay under clearly anaerobic conditions.	☑	☑
B.6.1.17. In case of renewal of the crediting period, the following data should be updated according to default values suggested in the most recently published IPCC Guidelines for National Greenhouse Gas Inventories: • Oxidation factor (OX) • Fraction of methane in the SWDS gas (F) • Fraction of degradable organic carbon (DOC) that can decompose (DOCf) • Methane correction factor (MCF) • Fraction of degradable organic carbon (by weight) in each waste type j (DOCj). • Decay rate for the waste type j (kj).	1,2	See B.6.1.16.	☑	☑
B.6.2. Data and parameters that are available at validation *The Emission reduction is estimated by the formula ERy = ERheat, y + ERelectricity, y + BEbiomass, y − PEy − Ly* *ERy = Emissions reductions of the project activity during the year y (tCO_2e/yr)* *ERelectricity,y = Emission reductions due to displacement of electricity during the year y (tCO_2e/yr)* *ERheat,y = Emission reductions due to displacement of heat during the year y (tCO_2e/yr)* *BEbiomass,y = Baseline emissions due to natural decay or burning of anthropogenic sources of biomass residues during*				

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
	the year y (tCO_2e/yr) *PEy = Project emissions during the year y (tCO_2e/yr)* *Ly = Leakage emissions during the year y (tCO_2e/yr)* *Depending on the project not all variables are relevant. Only relevant variables shall be considered following.* *Parameters that are not relevant shall be addressed as not relevant.*				
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	Some parameters are missing regarding the requirement of the applied methodology. **Corrective Action Request No. 13** 1, Two parameters (GWP_{CH4} , electricity imports) are not included into chapter B.6.2, please revise. 2, Please further substantiate the reason why the PP chose not to claim the baseline emission from heat displacement.	CAR	☑
B.6.2.2.	Does the quantity of biomass residues refer to the dry weight?	1,2	Yes, the quantity of biomass residues applied in the ER calculation refers to the dry weight. Moisture content of the biomass residues has been considered.	☑	☑
B.6.2.3.	Parameter Title: Global warming potential for CH_4 GWP_{CH4}	1,2	<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> See **Corrective Action Request No. 13**	See CAR	☑
B.6.2.4.	Parameter Title:	1,2		☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
Net quantity of electricity generated during the three most recent years in the fossil fuel fired captive power plant identified as baseline plant (P3) $EG_{CP,historic,3y}$		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 It is not applicable as scenario 2 is most possible baseline scenario of the proposed project.		
B.6.2.5. Parameter Title: Net quantity of electricity generated during the most recent three years in all power plants at the project site, generated from firing the same type(s) of biomass residues as in the project plant $EG_{historic,3y}$	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A It is not applicable as scenario 2 is most possible baseline scenario of the proposed project.	☑	☑
B.6.2.6. Parameter Title: Quantity of fossil fuel type i combusted during the most recent three years in the captive power plant $FF_{CP,historic,3y,i}$	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A It is not applicable as scenario 2 is most possible baseline scenario of the proposed project.		
B.6.2.7. Parameter Title: Average net efficiency of heat generation in the project plant prior to project implementation $\varepsilon_{th,pre\ project}$	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A It is not applicable as scenario 2 is most possible baseline scenario of the proposed project.	☑	☑
B.6.2.8. Parameter Title: Average net efficiency of electricity generation in the project plant prior to project implementation $\varepsilon_{el,pre\ project}$	1,2	. Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A It is not applicable as scenario 2 is most possible baseline scenario of the proposed project.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
B.6.2.9. Parameter Title: Average net efficiency of electricity generation in biomass residue fired power plants in the grid that fire the same type of biomass residues as the project plant. $\varepsilon_{el,grid\ plant(s)}$	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A	☑	☑
B.6.2.10. Parameter Title: Average net energy efficiency of electricity or heat generation in the reference plant that would be constructed in the absence of the project activity ε el, reference plant / $\varepsilon_{th,reference\ plant}$	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A	☑	☑
B.6.2.11. Parameter title: Average net energy efficiency of electricity or heat generation in the reference power plant after the retrofit that would take place in the absence of the project activity.	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
$\varepsilon_{el,\ reference\ retrofit\ plant}$ or $\varepsilon_{th,reference\ retrofit\ plant}$		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.6.2.12. Parameter Title: Average net efficiency of electricity / heat generation in the existing power / cogeneration plant(s) fired with the same type of biomass residue at the project siteε el, existing plant / $\varepsilon_{th\_existing\ plant(s)}$ or $\varepsilon_{el\_existing\ plant(s)}$	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A	☑	☑
B.6.2.13. Parameter Title: Net quantity of heat generated during the most recent three years in all cogeneration plants at the project site, generated from firing the same type(s) of biomass residues as in the project plant $Q_{historic\ 3yr}$	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A	☑	☑
B.6.2.14. Parameter Title: Net quantity of heat generated during the most recent three years in all boilers at the project site, generated from firing the	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
same type(s) of biomass residues as in the project plant $Q_{biomass\ historic\ 3yr}$		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.6.2.15. Parameter Title: Quantity of biomass residue type k that has been fired in boilers for heat generation during the most recent three years at the project site $BF_{k,\ Boiler,\ historic\ 3yr}$	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A	☑	☑
B.6.2.16. Parameter Title: Energy efficiency of the biomass residue fired boiler that would be used in the absence of the project activity $\varepsilon_{boiler\ biomass}$	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A	☑	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PDD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>B.6.2.17. Parameter Title:
Quantity of biomass residue type k used as fuel in all installations (power plants, boilers, etc) at the project site during the most recent three years prior to the implementation of the project activity
$BF_{historic, k, 3yr}$</td><td>1,2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.18. Parameter Title:
Moisture content of each biomass residue type k or i</td><td>1,2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.19. Parameter Title:
Net calorific values of fossil fuel type i
NCV_i</td><td>1,2</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr></table></td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Choice of data correctly justified? N/A Measurement method correctly described? N/A		
B.6.2.20. Parameter title: Energy efficiency of the boiler that would be used in the absence of the project activity to generated heat $\varepsilon_{BL, boiler}$	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A PP has chosen not claim the baseline emission from heat displacement	☑	☑
B.6.2.21. Parameter title: CO_2 emission factor for the fossil fuel type that would in the absence of the project activity be used in the reference plant $EF_{CO2,FF,ref}$	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A	☑	☑
B.6.2.22. Parameter Title: CH4 emission factor for the combustion of biomass residues in the project plant $EF_{CH4,BF}$	1,2	Monitoring Checklist / Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		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.6.2.23. Parameter title: CO_2 emission factor of the fossil fuel type used for heat generation in the absence of the project activity $EF_{CO2,BL,heat}$	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A PP has chosen not to claim the baseline emission from heat displacement.	☑	☑
B.6.2.24. Parameter title: Quantity of fossil fuel type i combusted in the reference plant during the year y $FF_{ref,i,y}$ (applicable to scenario 21)	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Measurement method correctly described? N/A		
B.6.2.25. Parameter title: Quantity of biomass residue type k combusted in the reference plant during the year y $BF_{ref,k,y}$ (applicable to scenario 21)	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A	☑	☑
B.6.2.26. Parameter title: Methane generation potential of the waste water $B_{o,ww}$	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A The project does not involve wastewater treatment activity.	☑	☑
B.6.2.27. Parameter title: Methane correction factor for the waste water MCF_{ww}	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Choice of data correctly justified? N/A Measurement method correctly described? N/A		
B.6.2.28. Parameter title: Ratio of energy from technically maximum biomass quantities that would be fired in the reference plant to the total energy that would be generated in the reference plant (from fossil fuels and the technically maximum biomass quantities) in year y F_b (applicable to scenario 21)	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A	☑	☑
Tool to calculate baseline, project and/or leakage emissions from electricity consumption(version 01)				
B.6.2.29. Parameter title: Rated capacity of the captive power plant(s) that provide the project or leakage consumption source(s) *l* or *j* with electricity $PP_{CP,j}$ and $PP_{CP,l}$	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A The project belongs to case A presented in Tool to calculated project emissions from electricity consumption.	☑	☑
Tool to determine methane emissions avoided from dumping waste at a solid waste disposal site(version 04)				
B.6.2.30. Parameter Title: φ - Model correction factor to account for model uncertainties	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A The baseline scenario for the use of the biomass residues is to be dumped or left to decay or burnt in an uncontrolled manner without utilizing, so this tool is not applicable.		
B.6.2.31. Parameter Title: OX - Oxidation factor (reflecting the amount of methane from SWDS that is oxidized in the soil or other material covering the waste)	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A	☑	☑
B.6.2.32. Parameter Title: MCF - Methane correction factor	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A	☑	☑
B.6.2.33. Parameter Title:	1,2		☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
DOC_f - Fraction of degradable organic carbon (DOC) that can decompose		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.6.2.34. Parameter Title: DOCj - Fraction of degradable organic carbon by weight in the waste type j	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A	☑	☑
B.6.2.35. Parameter Title: kj – Decay rate for the waste type j	1,2	Data Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A	☑	☑
B.6.2.36. Parameter Title: F, Fraction of methane in the SWDS gas	1,2	Data Checklist / Yes / No	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
(volume fraction)		Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided? N/A Has this value been verified? N/A Choice of data correctly justified? N/A Measurement method correctly described? N/A		
B.6.3. Ex-ante calculation of emission reductions				
B.6.3.1. Is the projection based on the same procedures as used for future monitoring?	1,2	Yes, the procedures are the same as used for future monitoring.	☑	☑
B.6.3.2. Are the GHG calculations documented in a complete and transparent manner?	1,2	The GHG calculations are documented in a complete and transparent manner, but please see **Clarification Request No. 3** in B.6.1.1	CR	☑
B.6.3.3. Is the data provided in this section consistent with data as presented in other chapters of the PDD?	1,2	**Corrective Action Request No. 14** The symbol of CH_4 emission factor in Formulae $PE_{Biomass,CH4,y} = EC_{CH4,BF} \cdot \sum_k BF_{k,y} \cdot NCV_k$ on page 33 is not in line with the applied methodology, please revise. **Clarification Request No. 4.** Please clarify the statement that the on-site consumption of fossil fuel is from only one fuel of diesel and it is conservatively estimated that the annual diesel consumption is about 0.5 tons, relevant evidence should be delivered to DOE.	CAR CR	☑
B.6.3.4. Are calculation tools used? If so is the data used in the tools consistent with the stated in the PDD?	1,2	Yes, the data used is consistent with those stated in the PDD.	☑	☑
B.6.4. Summary of the ex-ante estimation of emission reductions				

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
B.6.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	1,2	Yes, the project will use biomass residues to generate electricity and heat which will result in fewer GHG emissions than the base-line scenario.	☑	☑
B.6.4.2. Is the form/table required for the indication of projected emission reductions correctly applied?	1,2	Yes, the form is correctly applied according to the PDD template.	☑	☑
B.6.4.3. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	1,2	Yes, it is.	☑	☑
B.6.4.4. Is the data provided in this section in consistency with data as presented in other chapters of the PDD?	1,2	Yes, no contradiction.	☑	☑
B.7. Application of the monitoring methodology and description of the monitoring plan				
B.7.1. Data and parameters monitored				
B.7.1.1. Is the list of parameters presented in chapter B.7.1 considered to be complete with regard to the requirements of the applied methodology?	1,2	**Corrective Action Request No. 15** 1. The data unit, the source referenced and the measurement methods should be presented project specifically(i.e., not using "or"), such as the parameters: 1) $BF_{k,y}$ 2) $BF_{T,k,y}$ 3) $FF_{project\ plant,i,y}$ 4) TDLy 5) $Q_{project\ plant,\ y}$ 6) NCV_k 7) $EF_{burning,\ CH4,k,y}$	CAR	☑

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<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PDD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td></td><td>8) $BF_{available,k,y}$
9) $BF_{utilized,k,y}$
2. Please add the monitoring frequency of $EF_{burning, CH4,k,y,}$ BFutilized,k,y and BFavailable,k,y based on the methodology.
3. The parameter $EF_{CO2,i,y}$ weighted average CO_2 emission factor of fuel type i (diesel) in year y (tCO2/GJ) has to be monitored.</td><td></td><td></td></tr>
<tr><td>B.7.1.2. Parameter Title:
Quantity of biomass residue type k combusted in the project plant during the year y
$BF_{k,y}$</td><td>1,2</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>No</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>No</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table>
See **Corrective Action Request No. 15**</td><td>CAR</td><td>☑</td></tr>
<tr><td>B.7.1.3. Parameter Title:
Quantity of biomass residue type k that has been transported to the project site during the year y where k are the types of biomass residues used in the project plant in year y
$BF_{T,k,y}$</td><td>1,2</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>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></table></td><td>CAR</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Correct reference to standards? — No Indication of accuracy provided? — No QA/QC procedures described? — No QA/QC procedures appropriate? — No See **Corrective Action Request No. 15**		
B.7.1.4. Quantity of biomass residue type k combusted in the fossil fuel plant during the year y (tons of dry matter or liter) $BF_{fossil\ fuel\ plant,k,y}$	1,2	Monitoring Checklist — Yes / No Title in line with methodology? — N/A Data unit correctly expressed? — N/A Appropriate description of parameter? — N/A Source clearly referenced? — N/A Correct value provided for estimation? — N/A Has this value been verified? — N/A Measurement method correctly described? — N/A Correct reference to standards? — N/A Indication of accuracy provided? — N/A QA/QC procedures described? — N/A QA/QC procedures appropriate? — N/A	☑	☑
B.7.1.5. Parameter Title: Moisture content of the biomass residues	1,2	Monitoring Checklist — Yes / No Title in line with methodology? — Yes Data unit correctly expressed? — Yes Appropriate description of parameter? — Yes Source clearly referenced? — Yes Correct value provided for estimation? — Yes Has this value been verified? — Yes Measurement method correctly described? — Yes Correct reference to standards? — Yes Indication of accuracy provided? — Yes	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		QA/QC procedures described? — Yes QA/QC procedures appropriate? — Yes		
B.7.1.6. Parameter Title: CH4 emission factor for the combustion of biomass residues in the project plant $EF_{CH4,BF}$	1,2	Monitoring Checklist / Yes / No: Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A A default value of 30 kgCH_4/GJ has been adopted according to the methodology.	☑	☑
B.7.1.7. Parameter Title: Average round trip distance (from and to) between biomass fuel supply sites and the project site AVD_y	1,2	Monitoring Checklist / Yes / No: Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided for estimation? Yes Has this value been verified? Yes Measurement method correctly described? Yes	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Correct reference to standards? Yes Indication of accuracy provided? Yes QA/QC procedures described? Yes QA/QC procedures appropriate? Yes		
B.7.1.8. Parameter Title: Number of truck trips for the transportation of biomass. N_y	1,2	Monitoring Checklist / Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided for estimation? Yes Has this value been verified? Yes Measurement method correctly described? Yes Correct reference to standards? Yes Indication of accuracy provided? Yes QA/QC procedures described? Yes QA/QC procedures appropriate? Yes	☑	☑
B.7.1.9. Parameter Title: Average truck load of the trucks used for transportation of biomass. TL_y	1,2	Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		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.7.1.10. Parameter Title: Average CO2 emission factor for the trucks during the year y $EF_{km,CO2,y}$	1,2	Monitoring Checklist: Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided for estimation? Yes Has this value been verified? Yes Measurement method correctly described? Yes Correct reference to standards? Yes Indication of accuracy provided? Yes QA/QC procedures described? Yes QA/QC procedures appropriate? Yes	☑	☑
B.7.1.11. Parameter Title: Mass or volume unit $FC_{TR,i,y}$	1,2	Monitoring Checklist: Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A Option 1 is selected to calculate the carbon dioxide emissions from combustion of fossil fuels for transportation of biomass residues to the project plant, so this parameter is not applicable.		
B.7.1.12. Parameter Title: CO2 emission factor for fossil fuel type i $EF_{CO2,FF,i}$	1,2	Monitoring Checklist / Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided for estimation? Yes Has this value been verified? Yes Measurement method correctly described? Yes Correct reference to standards? Yes Indication of accuracy provided? Yes QA/QC procedures described? Yes QA/QC procedures appropriate? Yes	☑	☑
B.7.1.13. Parameter Title: Quantity of fossil fuel type i combusted in the project plant during the year y $FF_{project\ plant,i,y}$	1,2	Monitoring Checklist / Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Correct value provided for estimation? — Yes Has this value been verified? — Yes Measurement method correctly described? — No Correct reference to standards? — Yes Indication of accuracy provided? — Yes QA/QC procedures described? — Yes QA/QC procedures appropriate? — Yes See **Corrective Action Request No. 15**		
B.7.1.14. Parameter Title: Quantity of fossil fuel type i combusted at the project site for other purposes that are attributable to the project activity during the year y $FF_{project\ site,i,y}$	1,2	Monitoring Checklist — Yes / No Title in line with methodology? — N/A Data unit correctly expressed? — N/A Appropriate description of parameter? — N/A Source clearly referenced? — N/A Correct value provided for estimation? — N/A Has this value been verified? — N/A Measurement method correctly described? — N/A Correct reference to standards? — N/A Indication of accuracy provided? — N/A QA/QC procedures described? — N/A QA/QC procedures appropriate? — N/A	☑	☑
B.7.1.15. Parameter Title: Quantity of fossil fuel type i combusted in the existing fossil fuel based cogeneration plant during the year y $FF_{fossil\ fuel\ plant,i,y}$		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	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A		
B.7.1.16. Parameter Title: Quantity of steam diverted from other boilers to the project plant.	1,2	Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A	☑	☑
B.7.1.17. Parameter Title: Average net efficiency of steam generation in the plant(s) from where steam is diverted to the project plant	1,2	Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		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.7.1.18. Parameter Title: Net quantity of electricity generated in the project plant during the year y $EG_{project\ plant,y}$	1,2	Monitoring Checklist / Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided for estimation? Yes Has this value been verified? Yes Measurement method correctly described? Yes Correct reference to standards? Yes Indication of accuracy provided? Yes QA/QC procedures described? Yes QA/QC procedures appropriate? Yes	☑	☑
B.7.1.19. Parameter Title: Net quantity of electricity generated in the fossil fuel fired captive power plant during the year y $EG_{CP,y}$	1,2	Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A		
B.7.1.20. Parameter Title: Net quantity of electricity generated in the existing fossil fuel fired cogeneration system during the year y $EG_{fossil\ fuel\ plant,y}$ (applicable to scenario 22)	1,2	Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A	☑	☑
B.7.1.21. Parameter Title: Net quantity of electricity generated in all power plants at the project site, generated from firing the same type(s) of biomass residues as in the project plant, including the new power plant installed as part of the project activity and any previously existing plants, during the year y $EG_{total,y}$	1,2	Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A		
B.7.1.22. Parameter Title: Net quantity of heat generated from firing biomass in the project plant $Q_{project\ plant,y}$	1,2	Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A See **Corrective Action Request No. 13** PP has chosen not to claim the baseline emission from heat displacement.	CAR	☑
B.7.1.23. Parameter Title: Total quantity of heat that is generated in the project plant during the year y $Q_{Tot,proj,y}$ (applicable to Scenario 21)	1,2	Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		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.7.1.24. Parameter Title: Net quantity of heat generated in all cogeneration plants at the project site, generated from firing the same type(s) of biomass residues as in the project plant, including the cogeneration plant installed as part of the project activity and any previously existing plants, during the year y $Q_{total,y}$	1,2	Monitoring Checklist — Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A	☑	☑
B.7.1.25. Parameter Title: Quantity of heat generated in the fossil fuel cogeneration project plant $Q_{fossil\ fuel\ plant,y}$	1,2	Monitoring Checklist — Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A	☑	☑
B.7.1.26. Parameter Title:	1,2		☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
Net calorific value of the fossil fuel type i NCV_i		<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>		
B.7.1.27. Parameter Title: Net calorific value of biomass residue type k NCV_k	1,2	<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>No</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table> See **Corrective Action Request No. 15**	CAR	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PDD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>B.7.1.28. Parameter Title:
CH4 emission factor for uncontrolled burning of the biomass residue type k during the year y
$EF_{burning,CH4,k,y}$</td><td>1,2</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>No</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>No</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table>
See <u>Corrective Action Request No. 15</u></td><td>CAR</td><td>☑</td></tr>
<tr><td>B.7.1.29. Parameter Title:
Average net energy efficiency of heat generation in the boiler that would generate heat in the absence of the project activity
ε boiler</td><td>1,2</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided for estimation?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr><tr><td>Correct reference to standards?</td><td>N/A</td></tr><tr><td>Indication of accuracy provided?</td><td>N/A</td></tr><tr><td>QA/QC procedures described?</td><td>N/A</td></tr></table></td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		QA/QC procedures appropriate? N/A		
B.7.1.30. Parameter Title: Demonstration that the biomass residue type k from a specific source would continue not to be collected or utilized, e.g. by an assessment whether a market has emerged for that type of biomass residue (if yes, leakage is assumed not be ruled out) or by showing that it would still not be feasible to utilize the biomass residues for any purposes.	1,2	Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A L2 is selected to analyze the leakage.	☑	☑
B.7.1.31. Parameter Title: Quantity of biomass residues of type k that are utilized (e.g. for energy generation or as feedstock) in the defined geographical region	1,2	Monitoring Checklist / Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? No Correct value provided for estimation? Yes Has this value been verified? Yes Measurement method correctly described? No Correct reference to standards? Yes Indication of accuracy provided? Yes QA/QC procedures described? Yes	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		QA/QC procedures appropriate? — Yes See **Corrective Action Request No. 15**		
B.7.1.32. Parameter Title: Quantity of available biomass residues of type k in the region	1,2	Monitoring Checklist — Yes / No Title in line with methodology? — Yes Data unit correctly expressed? — Yes Appropriate description of parameter? — Yes Source clearly referenced? — No Correct value provided for estimation? — Yes Has this value been verified? — Yes Measurement method correctly described? — No Correct reference to standards? — Yes Indication of accuracy provided? — Yes QA/QC procedures described? — Yes QA/QC procedures appropriate? — Yes See **Corrective Action Request No. 15**	CAR	☑
B.7.1.33. Parameter Title: Availability of a surplus of biomass residue type k (which can not be sold or utilized) at the ultimate supplier to the project and a representative sample of other suppliers in the defined geographical region.	1,2	Monitoring Checklist — Yes / No Title in line with methodology? — N/A Data unit correctly expressed? — N/A Appropriate description of parameter? — N/A Source clearly referenced? — N/A Correct value provided for estimation? — N/A Has this value been verified? — N/A Measurement method correctly described? — N/A Correct reference to standards? — N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A		
B.7.1.34. Parameter Title: On-site electricity consumption provided by the grid and/or captive power plant(s) attributable to the project activity during the year y $EC_{PJ,y}$	1,2	Monitoring Checklist: Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided for estimation? Yes Has this value been verified? Yes Measurement method correctly described? Yes Correct reference to standards? Yes Indication of accuracy provided? Yes QA/QC procedures described? Yes QA/QC procedures appropriate? Yes	☑	☑
B.7.1.35. Parameter Title: Use the latest approved version of ACM0002 to calculate the grid emission factor. If the power generation capacity of the project plant is less or equal to 15 MW, project participants may use the average CO2 emission factor of the electricity system, as referred to in option (d) in step 1 of the baseline determination in ACM0002. $EF_{grid,y}$	1,2	Monitoring Checklist: Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		QA/QC procedures described? N/A QA/QC procedures appropriate? N/A		
B.7.1.36. Parameter Title: Quantity of biomass residue type k combusted in all power plants at the project site during the year y Source of data: On-site measurements $BF_{all\ plants,k,y}$	1,2	Monitoring Checklist: Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A	☑	☑
B.7.1.37. Parameter Title: CO2 emission factor of the most carbon intensive fuel used in the country $EF_{CO2,LE}$	1,2	Monitoring Checklist: Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A	☑	☑

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<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>B.7.1.38. Parameter Title:
CO2 emission factor for the fossil fuel used in the captive power plant
$EF_{CP,CO2}$</td><td>1,2</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided for estimation?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr><tr><td>Correct reference to standards?</td><td>N/A</td></tr><tr><td>Indication of accuracy provided?</td><td>N/A</td></tr><tr><td>QA/QC procedures described?</td><td>N/A</td></tr><tr><td>QA/QC procedures appropriate?</td><td>N/A</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.7.1.39. Parameter Title:
Average net efficiency of electricity generation in the project plant in year y
$\varepsilon_{el,project\ plant,y}$
(applicable to Scenario 21)</td><td>1,2</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided for estimation?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr><tr><td>Correct reference to standards?</td><td>N/A</td></tr><tr><td>Indication of accuracy provided?</td><td>N/A</td></tr><tr><td>QA/QC procedures described?</td><td>N/A</td></tr></table></td><td>☑</td><td>☑</td></tr>
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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		QA/QC procedures appropriate? — N/A		
Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion (version 02)				
B.7.1.40. Parameter Title: Quantity of fuel type i combusted in process j during the year y FCi,j,y	1,2 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 See the parameter $FF_{project\ plant,\ i,\ y}$ in B.7.1.13.	☑	☑
B.7.1.41. Parameter title: Weighted average mass fraction of carbon in fuel type i in year y $W_{C,I,y}$	1,2 6	Monitoring Checklist — Yes / No: Title in line with methodology? — N/A Data unit correctly expressed? — N/A Appropriate description of parameter? — N/A Source clearly referenced? — N/A Correct value provided for estimation? — N/A Has this value been verified? — N/A Measurement method correctly described? — N/A Correct reference to standards? — N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A Option B is selected to calculate COEFi,y.		
B.7.1.42. Parameter title: Weighted average density of fuel type i in year y $\rho_{i,y}$	1,26	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 Option B is selected to calculate COEFi,y.	☑	☑
B.7.1.43. Parameter title: Weighted average net calorific value of fuel type i in year y NCVi,y	1,26	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	☑	☑

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<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PDD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td></td><td><table><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table></td><td></td><td></td></tr>
<tr><td>B.7.1.44. Parameter title:
Weighted average CO2 emission factor of fuel type i in year y
$EF_{CO2,i,y}$</td><td>1,2
6</td><td><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>
See <u>Corrective Action Request No. 15</u></td><td>CAR</td><td>☑</td></tr>
<tr><td colspan="5">Tool to calculate baseline, project emissions and/or leakage emissions from electricity consumption (version 01)</td></tr>
<tr><td>B.7.1.45. Parameter title:
Combined margin emission factor for the grid in the year y
$EF_{grid,CM,y}$</td><td>1,2</td><td>The project uses the latest approved version of ACM0002 to calculate the grid emission factor. Ex-ante method is selected.<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></td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A		
B.7.1.46. Parameter title: Average technical transmission and distribution losses for providing electricity to source j, k or l in the year y $TDL_{j,y}$ and $TDL_{k,y}$ and $TDL_{l,y}$	1,2	Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A	☑	☑
B.7.1.47. Parameter title: Quantity of fossil fuel type i fired in the captive power plant n in the time period t $FC_{n,i,t}$	1,2	Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A	☑	☑
B.7.1.48. Parameter title: Quantity of electricity generated in captive	1,2	Monitoring Checklist / Yes / No	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
power plant n in the time period t $EG_{n,t}$		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.7.1.49. Parameter title: Quantity of heat co-generated in captive power plant n in the period t $HG_{n,t}$	1,2	Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A	☑	☑
B.7.1.50. Parameter title: Efficiency of the boiler in which heat is assumed to be generated in the absence of a cogeneration plant $\eta_{boiler,y}$	1,2	Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A		
B.7.1.51. Parameter title: Average net calorific value of fossil fuel type I used in the period t $NCV_{i,t}$	1,2	Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A	☑	☑
B.7.1.52. Parameter title: CO2 emission factor of fossil fuel type I used in the period t $EF_{CO2,I,t}$	1,2	Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		QA/QC procedures appropriate? N/A		
Tool to determine methane emissions avoided from dumping waste at a solid waste disposal site (version 04)				
B.7.1.53. Parameter title: f - Fraction of methane captured at the SWDS and flared, combusted or used in another manner	1,2	Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A	☑	☑
B.7.1.54. Parameter title: GWP_{CH4} – Global Warming Potential (GWP) of methane, valid for the relevant commitment period	1,2	Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A	☑	☑
B.7.1.55. Parameter title: Wx – Total amount of organic waste pre-	1,2	Monitoring Checklist / Yes / No	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
vented from disposal in year x (tons)		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.7.1.56. Parameter title: $\rho_{n,j,x}$ –Weight fraction of the waste type j in the sample n collected during the year x	1,2	Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A	☑	☑
B.7.1.57. Parameter title: z – Number of samples collected during the year x	1,2	Monitoring Checklist / Yes / No Title in line with methodology? N/A Data unit correctly expressed? N/A Appropriate description of parameter? N/A Source clearly referenced? N/A Correct value provided for estimation? N/A	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Has this value been verified? N/A Measurement method correctly described? N/A Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A		
B.7.2. Description of the monitoring plan				
B.7.2.1. Is the operational and management structure clearly described and in compliance with the envisoned situation?	1,2	Yes, the operational and management structure of data monitoring is clearly described in B.7.2.	☑	☑
B.7.2.2. Are responsibilities and institutional arrangements for data collection and archiving clearly provided?	1,2	Yes	☑	☑
B.7.2.3. Does the monitoring plan provide current good monitoring practice?	1,2	Yes, the monitoring application mainly includes the data management system and the CDM working group. **Corrective Action Request No. 16** 1. In chapter B.7.2, the parameters mentioned to be monitored is not sufficient, please revise. 2. It is not clear what kind of NCV value of biomass residues will be showed in the central control room, monitored or default? Please revise. 3. The content of B.7.2 section 6 “Data collection” is all about contingency plan, please use an appropriate title.	CAR	☑
B.7.2.4. If applicable: Does annex 4 provide useful information enabling a better understanding of the envisoned monitoring provisions?	1,2	Not applicable.	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
B.8. Date of completion of the application of the baseline study and monitoring methodology an the name of the responsible person(s)/entity(ies)					
B.8.1.	Is there any indication of a date when the baseline was determined?	1,2	The baseline study and monitoring methodology for the proposed project was completed on 05/09/2008	☑	☑
B.8.2.	Is this consistent with the time line of the PDD history?	1,2	Yes, it is consistent.	☑	☑
B.8.3.	Is the information on the person(s) / entity(ies) responsible for the application of the baseline and monitoring methodology provided consistent with the actual situation?	1,2	Yes. Mr. Zhuang Xuntao and Mr. Cheng Xiaodong determined the baseline and monitoring methodology	☑	☑
B.8.4.	Is information provided whether this person / entity is also considered a project participant?	1,2	The persons are considered to be project participant.	☑	☑
C. Duration of the project activity / crediting period					
C.1. Duration of the project activity					
C.1.1.	Are the project's starting date and operational lifetime clearly defined and reasonable?	1,2 20	Yes, the project starting date is Apr.9th 2008 and the operational lifetime is expected to be 20 years.	☑	☑
C.2. Choice of the crediting period and related information					
C.2.1.	Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	1,2	Yes, 7 years is chosen as the crediting period. **Corrective Action Request No. 17** A feasible starting date of the first crediting period should be	CAR	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
			adopted and the ER of 2009 and 2016 should be revised accordingly.		
D. Environmental impacts					
D.1. Documentation on the analysis of the environmental impacts, including transboundary impacts					
D.1.1.	Has the analysis of the environmental impacts of the project activity been sufficiently described?	1,2	Yes, the environmental impacts of the project activity such as waste gas, waste water, noise and solid waste have been clearly described.	☑	☑
D.1.2.	Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been approved?	1,2 12	Yes, an EIA is a must in P. R. China for new construction projects	☑	☑
D.1.3.	Will the project create any adverse environmental effects?	1,2 13	The project will create no negative environmental impacts.	☑	☑
D.1.4.	Were transboundary environmental impacts identified in the analysis?	1,2	Whether there are transboundary impacts is not described in the PDD, but there are no transboundary effects to be expected.	☑	☑
D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party					
D.2.1.	Have the identified environmental impacts been addressed in the project design sufficiently?	1,2 13	Preventive measures like implementation of advanced Danish soot reduction technology, separate water drainage system, wastewater treatment, selection of low noise equipments, the utilization of ash as fertilizers have been clearly described.	☑	☑
D.2.2.	Does the project comply with environmental legislation in the host country?	1,2 13	Yes. The project is conformity with the environmental legislation of P. R. China.	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
E. Stakeholders' comments					
E.1. Brief description how comments by local stakeholders have been invited and compiled					
E.1.1.	Have relevant stakeholders been consulted?	1,2 21	The stakeholders have been consulted in May~June 2007 and Jan~Feb 2008, Questionnaires have been distributed during the consultation.	☑	☑
E.1.2.	Have appropriate media been used to invite comments by local stakeholders?	1,2 21	**Corrective Action Request No. 18** Please indicate in the PDD what kind of media has been used to invite the stakeholders' comments.	CAR	☑
E.1.3.	If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	1,2	There are no regulations/laws in China for carrying out the stakeholder consultation process for this project activity.	☑	☑
E.1.4.	Is the undertaken stakeholder process that was carried out described in a complete and transparent manner?	1,2 21	Yes. Confirmed with the detailed documents which are reviewed on site, the process is described in a complete and transparent manner.	☑	☑
E.2. Summary of the comments received					
E.2.1.	Is a summary of the received stakeholder comments provided?	1,2	There is a summary of the stakeholder comments in chapter E.2. of the PDD.	☑	☑
E.3. Report on how due account was taken of any comments received					
E.3.1.	Has due account been taken of any stakeholder comments received?	1,2	There is a summary regarding the concerns of some respondents in chapter E3 in the PDD. In conclusion the implementation of the project will not have a negative impact on environment. The emission of pollutants is below the national standards. Design of com-	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
			pact layout will also be adopted to reduce land occupation.		
F. Annexes 1 - 4					
Annex 1: Contact Information					
F.1.1.	Is the information provided consistent with the one given under section A.3?	1,2	Yes.	☑	☑
F.1.2.	Is the information on all private participants and directly involved Parties presented?	1,2	The project participants are Anneng (Yicheng) Biomass Thermo-Electricity Co. Ltd and Emissionshandels Gesellschaft Bavaria GmbH.	☑	☑
Annex 2: Information regarding public funding					
F.1.3.	Is the information provided on the inclusion of public funding (if any) in consistency with the actual situation presented by the project participants?	1,2	Yes. There is no public funding necessary; all costs are covered by private equity and bank loans.	☑	☑
F.1.4.	If necessary: Is an affirmation available that any such funding from Annex-I-countries does not result in a diversion of ODA?	1,2	N/A	☑	☑
Annex 3: Baseline information					
F.1.5.	If additional background information on baseline data is provided: Is this information consistent with data presented by other sections of the PDD?	1,2 4	Yes. The input data to calculate OM and BM are provided in Annex 3.	☑	☑
F.1.6.	Is the data provided verifiable? Has sufficient evidence been provided to the validation team?	1,2 4	See F1.5	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PDD in GSP	Final PDD
F.1.7.	Does the additional information substantiate / support statements given in other sections of the PDD?	1,2 4	See F1.5	☑	☑
Annex 4: Monitoring information					
F.1.8.	If additional background information on monitoring is provided: Is this information consistent with data presented in other sections of the PDD?	1,2	N/A	☑	☑
F.1.9.	Is the information provided verifiable? Has sufficient evidence been provided to the validation team?	1,2	N/A	☑	☑
F.1.10.	Do the additional information and / or documented procedures substantiate / support statements given in other sections of the PDD?	1,2	N/A	☑	☑

Table 2 Resolution of Corrective Action and Clarification Requests

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
Corrective Action Request No. 1 1. According to PDD Guideline of EB41, project participants are requested to state what scenario was existing prior to the implementation of the project activity and discuss the baseline scenario and project scenario.(e.g. is the baseline scenario as same as the scenario existing prior to the start of implementation of the project activity?) **2.** Please update the version of PDD Form to version 3.	A2.1	**PP on 22/02/2009:** 1. Has been revised in page 2 in the latest PDD. Please check. 2. The version of PDD Form has been updated to version 03, please check the latest PDD.	☑ The statement regarding pre-project, baseline and project scenario has been added in the PDD. The version of PDD from has been updated accordingly.
Corrective Action Request No. 2 Project participants are requested to deliver the approval of Connection System to the DOE.	A2.2	**PP on 22/02/2009:** The approval letter (Ediansifazhan[2007]No.255) for Power Connection System issued by Hubei Province Electric Power Co.ltd on 10/09/2007 has been submitted. Please check. Annex 1	☑ The approval letter for Power Connection System has been submitted to DOE. (IRL 62)

Corrective Action Request No. 3 The PDD should clearly inform from which place the GPS coordinates were taken.	A4.1.1	**PP on 22/02/2009:** According to page 40 in the FSR, Yicheng City has north latitude of 31°26'-31°54' and east longitude of 111°57'-112°45'. The proposed project was in the above location range in Yicheng City and its concrete coordinate was directly measured by the project owner on the project site. The related footnote has been added in the latest PDD. **DOE on 02/03/2009:** Please indicate in the PDD the specific measuring point of the GPS coordinates e.g. the center of the proposed project site. **PP on 14/03/2009:** The measuring point of the GSP coordinates was chosen at the gate of the power plant. The PDD was revised accordingly. The layout of the whole power plant which can show the location of the gate in the power plant has been submitted. Please check. "Annex1-090314"	☑ Description regarding GPS coordinates has been revised in the PDD.
Corrective Action Request No. 4 This section should include a description of how environmentally safe the project activity is.	A4.3.4	**PP on 22/02/2009:** Has been revised in section A.4.3 in the latest PDD. Please check.	☑ Relevant description has been added in the PDD.

Corrective Action Request No. 5 1. The parameters of boiler, turbine and generator should be consistent with the equipment contract. 2. A detailed description of the baseline scenario and the scenario existing prior to the start of the implementation of the project activity shall be included into section A.4.3 of the PDD. 3. Please also clearly present the pretreatment process of the biomass residues prior to their combustion. 4. Based on latest PDD guideline (version 7), the description of the scenarios should include, inter alia: - The information about the age and average lifetime of the equipments based on manufacturer's specifications and industry standards, load factors and efficiencies. - The emissions sources and the greenhouse gases involved in the project activity and existing and forecast energy and mass flows and balances of the systems and equipments included in the project activity shall be included. - The description should clearly explain how the same types and levels of services provided by the project activity would have been provided in the baseline scenario.	A4.3.5	**PP on 22/02/2009:** **1.** The parameters of boiler, turbine and generator have been revised according to the equipment contracts in section A.4.3. Please check.The purchase contract of boiler and its technical agreement have been submitted. Annex 2 **2.** Has been revised in section A.4.3 in the latest PDD. Please check. **3.** Has been revised in section A.4.3 in the latest PDD. Please check. **4.** **-** the age and average lifetime of the boiler, turbine and generator have been added according to the equipment contracts; - The emissions sources and the greenhouse gases involved in the project activity have been added. Mass and energy flows and the balance of the systems were described; and the involved equipments are described. - In absence of the proposed project, the most feasible baseline scenario has been added.	☑ 1, Relevant description has been revised in the PDD. The equipment purchase contract has been delivered to DOE. (IRL 18, 19) 2, Regarding item 2, 3 and 4, relevant descriptions have been added in the PDD accordingly.

Clarification Request No. 1 The training program has been prepared by project owner, please deliver the related document to DOE when the program is finished.	A4.3.8	**PP on 22/02/2009:** The training program is in the chapter 9 in the Monitoring Manual. Please check the submitted Monitoring Manual. And the proposed project is now in construction and the more detailed training program will be finished with the process of the project.	☑ Relevant content in the Monitoring Manual has been reviewed by the DOE. (IRL 34)
Corrective Action Request No. 6 According to EB48, Annex 60 regarding the validity of the applied meth/version adopted in the proposed project during incompleteness check by EB, please update the latest version of meth/version into the PDD.	B.1.1	**PP on 28/04/2010:** Yes, ACM0006 (version 10) has been applied and the reference is clearly indicated. In addition, the following tools/methodology were used: ACM0002: "Consolidated baseline and monitoring methodology for grid-connected electricity generation from renewable sources" (Version 11); "Tool to calculate the emission factor for an electricity system" (version 02); "Combined tool to identify the baseline scenario and demonstrate additionality" (Version 02.2); Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion (version 02); "Tool to calculate baseline, project and/or leakage emissions from electricity consumption" (version 01, EB39).	☑ The methodologies and tools have been updated to the most recent version, and verified by DOE.

Corrective Action Request No. 7 1. The emission sources should be discussed project specifically and not simply copied from the methodology, i.e. PP should clearly document their choice in the PDD, instead of using the wording "maybe", "included or excluded" etc. 2. According to latest PDD guideline (version 7), please present a flow diagram of the project boundary, physically delineating the project activity. Include in the flow diagram all the equipments, systems and flows of mass and energy described in section A.4.3. Particularly, represent in the diagram the emissions sources and gases included in the project boundary and the monitoring variables. 3. Please redefine the project boundary since the PP doesn't claim the emissions reductions from heat displacement of the proposed project.	B.3.8	**PP on 22/02/2009:** 1. Has been revised in section B.3 in the latest PDD. Please check. 2. Has been revised in section B.3 in the latest PDD. Please check. 3. The project boundary includes the power plant at the project site, all power plants connected physically to the Central China Power Grid. sites where biomass residues would have been left to decay or burned, and the means for transportation of biomass to the project site.	☑ Discussion regarding emission sources has been revised accordingly in the PDD. A flow diagram of the project boundary has been presented in the PDD.
Corrective Action Request No. 8 Please clearly explain in the PDD if the project uses the different types of biomass residues, preferably using a table	B.4.1	**PP on 22/02/2009:** This situation has been explained when doing the biomass baseline alternatives choice. Please check the latest PDD.	☑ An explanation about the types of biomass residues has been added in the PDD.

Corrective Action Request No. 9 **Section B.4 step 1a:** Please add in the PDD the evidences of excluding the alternatives P5, P6, H8, H2, H4 and of reserving B3. Please also transfer these evidences to DOE for further validation It is not clear why the alternatives P5 and P6 are not in line with national guideline of saving energy and reducing emission, but H2 accords, please clarify. It is mentioned "scenario B1/B3/ H6 seems to be a plausible alternative without considering the barriers described in the latter step", are there any barriers for these scenarios? If yes, please present in the PDD. **Section B.4 step 2:** Investment barrier: please add the evidence of financing barriers in the PDD. Technology barrier: the evidence quoted by footnote 6 was issued in 2005, a new recent evidence should be used. Barriers due to lack of prevailing practice: please present the latest biomass project condition of Hubei province and add the evidence into the PDD.	B4.6	PP on 22/02/2009: Section B.4 step 1a: 1) How to exclude P5 and P6 and the evidence has been submitted. Annex 3. How to exclude H8 and the evidence has been submitted. Annex 4. How to exclude H2 and the evidence has been submitted. Annex 3; The reason for H4 has been revised and can be evidenced with the FSR; H4 has been excluded through step 1a. How to reserve B3 and the evidence has been submitted and can be evidenced with the FSR too. Annex 5 PDD has been revised accordingly, please check. 2) As for H2, if lower effective heat generation was adopted, it didn't accord with the national guideline of saving energy and reducing emission. So the related has been revised for H2. H2 has been excluded through step 1a. 3) No other barriers for B1,B3 and H6. They are feasible scenarios. ; PDD has been revised based on the above description and the supporting evidences. Section B.4 step 2: There are no substantiate barriers exist to prevent the implement of alternative scenario P1, P4, H1, H6, B1, B3 and B4. These scenarios are further discussed in step 3 investment analysis.	☑ Description of baseline scenario identification has been revised accordingly; relevant evidences have been submitted to DOE. (IRL 38, 39, 40, 41,42)

Corrective Action Request No. 10 1, Please state in the PDD for each boiler that was operating at the project site during the most recent three years prior to the start of the project activity: the type and capacity of the boilers, types and quantities of fuels have been used in the boiler during the most recent three years prior to the start of the project activity and whether the boiler continues operation after the start of the project activity? 2, Please state in the PDD for each boiler installed under the project activity and in the absence of the project activity: the type and capacity of the new boilers and which types and quantities of fuels would be used? 3, Please state in the PDD for each new boiler or power and heat plant that would be installed in the absence of the project activity: the type and capacity of the new boilers and/or power and heat plants and which types and quantities of fuels would be used?	B4.8 B4.9 B4.10	**PP on 22/02/2009:** Regarding item 2, the related information has been added in the end of step 2 in section B.4. Please check. **PP on 28/04/2010:** Regarding item 1, according to the on-site inspection and follow-up interviews, there are totally 20 existing boilers from 13 customers. And the type of the boiler, type of fuels used, boilers locations and coordinates have been listed in Chapter B.4 of the PDD and verified against FSR. All the boilers will stop operation as soon as the start of the project activity occurs. The type of the boiler and the fuel quantities are not provided because the emission reductions from heat replacement has not been claimed. And no any other heat generation equipments at the project site have been identified, **PP on 04/05/2010:** Regarding item 3, in the absence of the proposed project, according to p19 in section 2.2.2 in the FSR, there will be none of new boiler or new power and heat plant, and the heat would be generated by the existing coal-fired boilers, which were operating in the project site during the most recent three years.	☑ 1, The specifications of all existing boilers have been added into PDD, and the audit team verified and confirmed the heat generations which was from boilers in the most recent three years during on-site auditing. (IRL 64). 2, Relevant statement has been added in the PDD. 3, Relevant statement has been added into the revised PDD.

Corrective Action Request No. 11 1. IRR spreadsheet cannot be accepted without any calculated formula. 2. The IRR value and the values of sensitivity analysis in the PDD are not consistent with the IRR spreadsheets. Please revise. 3. Please add the evidence to support that the operation costs will not decrease more than 9.61% into the PDD. 4. Please add the variation of power output into sensitivity analysis and present the relevant evidences in the PDD. 5. Please provide in section B.5 of the PDD a detailed description of real and continuing actions took by the PP to secure CDM status in parallel with the project implementation, including CDM consulting contract signed, order with DOE signed, etc. Please also clearly indicate the event and the date of the investment decision and the project start.	B5.24	**PP on 22/02/2009:** 1. The IRR with calculated formula has been submitted; 2. revised 3. The reason has been added in the latest PDD and the evidence of the actual Biomass Purchase Agreements has been submitted. Annex 8 4. Power output was added into the sensitivity analysis and the related analysis was added. **5.** The related issues to the CDM development have been added in the timeline such as the signing the General Contract (Annex 9) and validation contract (Annex 10). **DOE on 03/03/2009:** Input values in the spreadsheet are slightly inconsistent with those in the claimed data source FSR. Please deliver relevant financial statements e.g. Profit and Loss Account, Balance Sheet, Cash Flow Statement from the FSR with translation to DOE for further assessment. **PP on 14/03/2009:** The relevant financial statements in the FSR such as Profit and Loss Account, Total cost and O&M cost, Cash Flow Statement etc with translation has been submitted. Please check. “Annex2-090314”	☑ The IRR spreadsheet with formula and relevant data sources have been submitted to DOE. (IRL 31) The inconsistency between the PDD and the IRR calculation spreadsheets has been revised. The plausible range of variation for O&M cost has been adequately justified in the PDD. Power output has been added into the sensitivity analysis and the plausible range of variation has been adequately justified. Items regarding continuing efforts made by PP to secure CDM statues have been added into the timeline table in the PDD.

Clarification Request No. 2 Please provide the FSR with key contents translation, including the cover page with completion date and complier, basic input data and IRR cash flow sheet.	B5.23	**PP on 22/02/2009:** Part of FSR with some translation has been submitted please check.(Annex 11) **DOE on 03/03/2009:** Please deliver the qualification certificate of the FSR complier to DOE. **PP on 14/03/2009:** The qualification certificate of the FSR complier(Wuhan Environmental Protection Engineering Technology Sharing Co.Ltd) has been submitted. The relevant information has been added in the PDD. Please check. “Annex3-090314”(issued by National Development and Reform Commission) and “Annex4-090314”(Ministry of Construction of the People’s Republic of China).	☑ Relevant documents have been submitted to DOE. (IRL 10, 30, 48)

Corrective Action Request No. 12 1. Please justify the selection of "similar activities" in the common practice analysis considering that the total capacity of the project activity is 24 MW, which implies that a selection of projects in the range 12 - 36 MW would have been more appropriate. 2. The evidence to show the difference between the proposed project and the similar activity should be clearly presented. If the similar activity is CDM project, please present the relevant linkage from UNFCCC website.	B5.27	**PP on 22/02/2009:** The choice for the similar capacity was added; The analysis for the similar projects has been revised and the related evidences have been added and submitted. **DOE on 09/03/2009:** Essential distinctions between the proposed CDM project activity and the other two similar activities (Xiantao and Hong'an Guoneng) have not been adequately justified. **PP on 14/03/2009:** There is none of the publicly available information for the CDM development of the two projects. According to the call interview for the two projects, the constructions and implementation of two activities of Xian-tao and Hong'an Guoneng haven't gone ahead after the approval of Hubei DRC because of the internal reasons. **DOE on 14/04/2009:** Common practice analysis has not been appropriately substantiated. If Xiantao biomass and hongán guoneng biomass are not operational, they could be excluded and the relevant statements in PDD have to be updated **PP on 22/04/2009:** The common practice analysis in the PDD has been modified further in accord with the "Combined tool to identify the baseline scenario and demonstrate additionality".	☑ Justification of the common practice boundary has been added in the PDD.

Clarification Request No. 3 1. Please provide the ER calculation spreadsheets to DOE. Please provide the evidence of $EF_{CO2,BF,heat}$ (89,500 $kgCO_2/TJ$). Please clarify where is option A and option B showed on page 22 of the PDD. 2. In section B.6.3, it is mentioned that the average round trip between the biomass residue supply sites and the project site is 42 kilometers. Please provide the relevant evidence to DOE. According to the methodology, in defining the geographical boundary of the region, PP may consider the farmost distance for biomass residues transportation. 3. Project participants shall assess as part of the monitoring the supply situation for the types of biomass residues used in the project plant. This statement should be added in B.6.1 of the PDD.	B6.1.1	**PP on 22/02/2009:** **1.** the ER calculation spreadsheets has been submitted. For $EF_{CO2,BF,heat}$, a lowest IPCC default value (87,300 $kgCO_2/TJ$) has been used, ER calculation was revised accordingly. **2.** has been revised according to "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion". **3.** According to Page 30 in the FSR, the biomass collection radius between the dispersed farmers to the collection stations is 5km, and the biomass collection radius between the collection stations and the proposed biomass cogeneration plant is 15km. In order to be more conservative, 21km was chosen as the total biomass collection radius from the dispersed biomass supply sites to the proposed project site. So 42km was adopted as the average round trip between the biomass residue supply sites and the project site **4.** This statement has been added in the end of section B.6.1 for the Leakage	☑ ER calculation spreadsheet has been submitted to DOE. ER is correctly calculated. The value of $EF_{CO2,BF,heat}$ was revised to 87,300 $kgCO_2/TJ$, which is a most conservative value according to 2006 IPCC Guidelines on National GHG Inventories and is considered acceptable. Description regarding on-site fossil fuel consumption has been revised. Data source of the round trip distance has been clarified. Relevant statement regarding monitoring of biomass availability has been added in the PDD.

Corrective Action Request No. 13 1, Two parameters (GWP_{CH4} , electricity imports) are not included into chapter B.6.2, please revise. 2, Please further substantiate the reason why the PP chose not to claim the baseline emission from heat displacement.	B6.2.1	**PP on 22/02/2009:** GWP_{CH4} and the electricity import have been added in section B.6.2; **PP on 06/04/2010:** As for the status of the proposed project, the power generation component was constructed and implemented firstly and the heat generation component such as the heat pipelines is still under the planning and implementation and the project owner hasn't yet signed any formal heat supply contract with the heat end user so far. Considering the conservativeness of the emission reductions, the project owner finally decided not to claim the emission reductions due to displacement of heat. So the emission reductions due to displacement of heat are zero in the whole crediting periods. So the latest PDD didn't calculate the emission reductions of heat generation.	☑ 1, Relevant parameters have been added in the PDD. 2, The relevant explanation has been added into the PDD and accepted by DOE as conservative measure.

Corrective Action Request No. 14 The symbol of CH_4 emission factor in Formulae $PE_{Biomass,CH4,y} = EC_{CH4,BF} \cdot \sum_k BF_{k,y} \cdot NCV_k$ on page 33 is not in line with the applied methodology, please revise.	B6.3.3	**PP on 22/02/2009:** The formulae in the GSP PDD is $PE_{biomass,CH4,y} = EF_{CH4,BF} \cdot \sum_k BF_{k,y} \cdot NCV_k$, which is fully consistent with the methodology but different from $PE_{Biomass,CH4,y} = EC_{CH4,BF} \cdot \sum_k BF_{k,y} \cdot NCV_k$ you referred to. Please check. **DOE on 03/03/2009:** Please check the GSP PDD again. **PP on 14/03/2009:** The formulae for CH_4 emissions in Page 33 in the GSP PDD has been revised. Please check.	☑ Relevant formula has been corrected.

Clarification Request No. 4 Please clarify the statement that the on-site consumption of fossil fuel is from only one fuel of diesel and it is conservatively estimated that the annual diesel consumption is about 0.5 tons, relevant evidence should be delivered to DOE.	B6.3.3	**PP on 22/02/2009:** The proposed project only uses the biomass as fuels and won't use any other fuels, please see the Item 2.3 in the Technical Agreement for the Boilers; The PDD estimated 0.5 tons of diesel which was conservative. **DOE on 09/03/2009:** How about the start-up process of the boiler? It is indicated in the technical agreement of the Boiler, "Nature gas will be used for the start-up and under light load conditions. Please add the relevant explanation in the PDD. **PP on 14/03/2009:** The evidences to show the start-up process of the boiler have been submitted. Please check. The PDD was revised accordingly. "Annex5-090314"(issued by Wuhan Environmental Protection Engineering Technology Sharing Co. Ltd) and "Annex6-090314"(issued by the boiler manufacturer);	☑ Description regarding start-up process of the boiler has been revised accordingly; relevant evidences have been delivered to DOE. (IRL 29)

Corrective Action Request No. 15 1. The data unit, the source referenced and the measurement methods should be presented project specifically(i.e., not using "or"), such as the parameters: 1) $BF_{k,y}$ 2) $BF_{T,k,y}$ 3) $FF_{project\ plant,i,y}$ 4) TDLy 5) $Q_{project\ plant,\ y}$ 6) NCV_k 7) $EF_{burning,\ CH4,k,y}$ 8) $BF_{available,k,y}$ 9) $BF_{utilized,k,y}$ 2. Please add the monitoring frequency of $EF_{burning,\ CH4,k,y}$, $BF_{utilized,k,y}$ and $BF_{available,k,y}$ based on the methodology. 3. The parameter $EF_{CO2,i,y}$ weighted average CO_2 emission factor of fuel type i (diesel) in year y (tCO2/GJ) has to be monitored.	B7.1.1	**PP on 22/02/2009:** 1. The data unit, the source referenced and the measurement methods for these parameters have been revised according to the proposed project's specification. **2.** The monitoring frequency for the three parameters have been revised according to the methodology. 3. This parameter has been added in section B.7.2	☑ Relevant descriptions have been revised accordingly. $EF_{CO2,diesel,y}$ has been added as parameter monitored.

Corrective Action Request No. 16 1. In chapter B.7.2, the parameters mentioned to be monitored is not sufficient, please revise. 2. It is not clear what kind of NCV value of biomass residues will be showed in the central control room, monitored or default? Please revise. 3. The content of B.7.2 section 6 "Data collection" is all about contingency plan, please use an appropriate title.	B7.2.3	**PP on 22/02/2009:** 1. More parameter needed to be monitored has been added. 2. The NCV will be shown in the central control room as the monitored value. 3. The title has been revised to "Contingency plan"	☑ Parameters monitored have been added in chapter B.7.2 of the PDD. Relevant descriptions about monitoring plan have been revised accordingly.
Corrective Action Request No. 17 A feasible starting date of the first crediting period should be adopted and the ER of 2009 and 2016 should be revised accordingly.	C2.1	**PP on 22/02/2009:** A feasible starting date of the first crediting period has been revised to be 01/01/2010 and the related ER has been revised accordingly in the whole latest PDD.	☑ A feasible starting date of the first crediting period has been chosen.
Corrective Action Request No. 18 Please indicate in the PDD what kind of media has been used to invite the stakeholders' comments.	E1.2	**PP on 22/02/2009:** The kind of media has been introduced in section E in the latest PDD, please check.	☑ The kind of media has been indicated in the PDD. (IRL 57)

Open Issue Pls. deliver the LoA issued by China and the Germany together with the MoC countersigned by both parties to the DOE before raising the request of registration.	A.3.2	**PP on 22/02/2009:** The LoA issued by China DNA on 05/12/2008 has been submitted. Annex 12 The MoC countersigned by both parties and the LOA issued by the Germany will be submitted as soon as possible. **PP on 14/03/2009:** The MoC countersigned by both parties has been submitted. Please check. "Annex7-090314" **DOE on 14/04/2009:** F-CDM-MOC form should be used unless the designated focal point provides evidence that it was signed prior to the availability of the F-CDM-MOC form i.e. 13 February, 2009. **PP on 22/04/2009:** The latest MOC will be submitted to TUV as soon as possible.	☑ LoAs and Moc have been submitted and checked by the DOE. (IRL 25, 26, 27)

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
-	-	-

Industrie Service

Annex 2: Information Reference List

Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
1.	05/09/2008	PDD "Yicheng Biomass Cogeneration Project in Hubei Province, China", Version 01	Emissionshandels Gesellschaft Bavaria GmbH	GSP PDD
2.	12/02/2010	The approved baseline and monitoring methodology applied in the proposed project activity is ACM0006 "Consolidated methodology for electricity generation from biomass residues in power and heat plant" (Version 10, EB52).	UNFCCC	
3.	26/02/2010	ACM0002: "Consolidated baseline and monitoring methodology for grid-connected electricity generation from renewable sources" (Version 11)	UNFCCC	
4.	16/10/2009	Tool to calculate the emission factor for an electricity system (version 2);	UNFCCC	
5.	26/08/2008	Combined tool to identify the baseline scenario and demonstrate additionality (version 02.2)	UNFCCC	
6.	02/08/2008	Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion (version 02)	UNFCCC	
7.	16/05/2008	Tool to calculate baseline, project and/or leakage emissions from electricity consumption (version 01, EB39)	UNFCCC	
8.	20/10/2008	Participant list of on-site interviews	TÜV SÜD	
9.	20/10/2008	On-site interviews conducted by TÜV SÜD. **Validation Team:** Ruifeng Li Jiangsu TÜV Product Service, Beijing Branch Xiaoyan Liu Jiangsu TÜV Product Service, Beijing Branch **Interviewed Persons:** Xuntao Zhuang Emissionshandels Gesellschaft Bavaria GmbH Xiaodong Cheng Anneng (Yicheng) Biomass Thermo-Electricity Co. Ltd	TÜV SÜD	
10.	Aug.2007	FSR "Yicheng Biomass Cogeneration Project in Hubei Province, China"	China City Environment Protection	Data source of Investment analysis

Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
			Engineering Limited Company	CDM prior consideration
11.	16/11/2007	Project approval of "Yicheng Biomass Cogeneration Project in Hubei Province, China" (FSR approval)	Hubei Development Reform Commission	
12.	June 2007	EIA report of "Yicheng Biomass Cogeneration Project in Hubei Province, China"	Hubei Environmental Sciences Research Institute	
13.	17/07/2007	EIA approval of "Yicheng Biomass Cogeneration Project in Hubei Province, China"	Hubei Environmental protection bureau	
14.	10/09/2007	Approval Letter of Grid Connection System (file no.: Ediansifazhan[2007]No.255)	Hubei Province Electric Power Co., Ltd	
15.	08/10/2007	Meeting minutes of CDM stakeholder meeting	Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd,	
16.	20/12/2007	Meeting minutes for CDM consideration	Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd,	Prior CDM considering evidence Investment decision
17.	06/03/2008	Letter of Intent of CDM cooperation	Anneng (Yicheng) Biomass Thermo-	Prior CDM considering

Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
			Electricity Co.Ltd, and Emissionshandels Gesellschaft Bavaria GmbH	evidence
18.	09/04/2008	Purchase agreement for Turbines and Generators	Qingdao Jieneng turbines Co.Ltd and Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd,	Start date of the project
19.	20/04/2008	Purchase agreement for Boilers	Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd, and China Western Power Industrial Co., Ltd	
20.	22/04/2008	Tariff approval of "Yicheng Biomass Cogeneration Project in Hubei Province, China"	Hubei Province Price Bureau	Cross-check evidence of electricity tariff
21.	08/05/2008	General Contract	Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd, and China City Environment Protection Engineering	Construction Contract Cross-check evidence of total static investment

Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
			Limited Company	
22.	30/05/2008	ERPA of "Yicheng Biomass Cogeneration Project in Hubei Province, China"	Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd, and Emissionshandels Gesellschaft Bavaria GmbH	On-going CDM considering evidence
23.	30/05/2008	Validation Contract with TUV-SUD	Emissionshandels Gesellschaft Bavaria GmbH and TUV Industrial Service	On-going CDM considering evidence
24.	23/07/2008	Permission for the constructions	Yicheng City Construction Bureau	Starting date of construction
25.	11/2008	LoA of China	NDRC of China	
26.	14/10/2009	LoA of Germany	DNA of Germany	
27.	17/04/2009	MoC	Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd, and Emissionshandels Gesellschaft Bavaria GmbH	
28.	10/08/2007	Business license for Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd,	Yicheng industry	

Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
			and commerce bureau	
29.	01/11/2008 05/03/2009	Explanation and Clarification for the Start-up way of the boiler	China City Environment Protection Engineering Limited Company and China Western Power Industrial Co., Ltd	
30.	03/2003	Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects	State Power Corporation of China	Benchmark evidence
31.	22/02/2009	IRR Calculation spreadsheet	Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd,	
32.	22/02/2009	ER Calculation spreadsheet	Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd,	
33.	18/07/2008	2008 Baseline Emission Factors for Regional Power Grids in China	NDRC of China	Cross-check evidence of EF & Gird definition
34.	06/2008	CDM monitoring manual	Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd,	
35.	05/06/2008	Electricity wiring diagram	Anneng (Yicheng) Biomass Thermo-	

Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
			Electricity Co.Ltd,	
36.	14/03/2009	Layout of the power plant	Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd,	
37.	30/07/2008	Straw Purchase Contract	Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd, and Mr. Yu Shan Lin	
38.	25/08/2008	Energy Conservation Law of the People's Republic of China	NDRC of China	
39.	29/11/2005	Directive Catalogue on Renewable Industry Development, Degree No. 2517 of NDRC Energy	NDRC of China	
40.	15/04/2002	Forbidding Construction of Fossil Fuel Fired Power Plants of or under 135 MW	State Council of China	
41.	07/08/1997	Interim Measures on Construction and Management of Small Thermal Power Generators	Ministry of Power Industry of China	Evidence for baseline scenario exclusion
42.	28/06/2007	Attractive New Energy – State Grid is interested in fuel ethanol	Shanghai Securities News	Evidence for baseline scenario exclusion
43.	13/12/1993	Provisional Regulations of the People's Republic of China on Enterprise Income Tax	State Council P.R.C.	Cross-check evidence of income tax rate
44.	10/11/2008	Provisional Regulations of the People's Republic of China on Value Added Tax (2008 revision)	State Council P.R.C.	Cross-check evidence of VAT rate

Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
45.	17/09/2008	Dangyang Madian Ganshi Biomass power generation project UNFCCC website linkage: http://cdm.unfccc.int/UserManagement/FileStorage/Q394AS7M7O3O6ARVPKUREPZVJ58FBQ	UNFCCC	Evidence for Common practice analysis
46.	25/09/2008	Jianli Kaidi Biomass Power Generation Project UNFCCC website linkage: http://cdm.unfccc.int/Projects/Validation/DB/DSMF6QJOX7TA6TT2UMMDWWVXS6TWB9/view.html	UNFCCC	Evidence for Common practice analysis
47.	12/06/2008	Hubei Shayang 15MW Biomass Power Generation Project http://cdm.unfccc.int/Projects/Validation/DB/OBPMXEHFN4PBXZJRXH107C5GITOCN6/view.html	UNFCCC	Evidence for Common practice analysis
48.	01/2001	Feasibility Study Provision of Project Combined Heat and Power Generation	State Development Planning Commission, State Economic and Trade Commission, Ministry of Construction	
49.	n.a	Implementation Status of Power Generation Plan in 2008 and Generation Plan of Power Station in 2009 of Hubei Grid	-	Cross-check evidence of annual electricity output
50.	20/04/2009	Explanation about Station Service Power Consumption Rate of Yicheng Biomass Cogeneration Project in Hubei Province	China City Environment Protection Engineering Limited Company	Cross-check evidence of annual electricity output

Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
51.	04/01/2006	Tentative Management Measures for Pricing and Expense-sharing for Electricity Generated from Renewable Energy	NDRC of China	Cross-check evidence of electricity tariff
52.	01/06/2002	Hubei province heating price management method (provisional)	Hubei Province Price Bureau	Cross-check evidence of heat tariff
53.	07/04/2010 (submission)	Heat price statistics of the similar projects in Hubei Province	Emissionshandels Gesellschaft Bavaria GmbH	Cross-check evidence of heat tariff
54.	22/04/2009	Detailed cross check analysis for the parameters		Cross-check analysis
55.	04/2007	The 11th Five-Year Plan for Energy Development (http://www.wtert.cn/data/policy2.pdf)	NDRC	Evidence for baseline scenario exclusion
56.	May-June, 2007	Bulletin pictures of inviting the stakeholder's comments	Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd,	
57.	06/06/2007	Webpage screen capture of inviting the stakeholder's comments	Website of Yicheng Government	
58.	Jan-Feb, 2008	Questionnaires	Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd,	
59.	04/2008	Economic Evaluation and Influences Factors Analysis on Biomass Combustion for Power Generation	Renewable Energy Resource, Vol.26, No.2	

Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
60.	21/10/2009	Explanation about Annual Steam Supply of Yicheng Biomass Cogeneration Project in Hubei Province	China City Environment Protection Engineering Limited Company	
61.	20/01/2010	Power Purchase Notice	Hubei Power Electric Company	
62.	10/09/2007	Grid Connection Notification	Hubei Power Electric Company	
63.	09/2008	Feasibility Study Report of Heat Supply Network	Beijing Huazi Engineering Design Company Hubei Division	
64.	04/2010 (submission)	Photos: one of existing boilers which was operating in most recent three years in the project site	Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd,	On-site auditing evidence
65.	04/06/2009	Registered PDD "Jiangsu Rudong Biomass Power Generation Project"	Jiangsu GuoXin Rudong Biomass Power Co., Ltd.	Ref. 2230
66.	04/09/2008	Notification of Further Strengthening Environmental Impact Assessment Management of Biomass Power Generation Projects http://www.gov.cn/gzdt/2008-09/08/content_1090271.htm	Ministry of Environmental Protection of PRC, NDRC and National Energy Bureau	
67.	02/2009	The operating model, existing problems and development strategies for China's straw storage and	Renewable Energy	Vol.27, No.1,

Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
		transportation system	Resources	
68.	19/08/2009	Biomass Purchase Contract (Ref No. YCSWZ00079)	Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd, and Mr. Liu Jinquan	
69.	09/03/2010-31/10/2010	Staff daily logbook of electronic belts	Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd,	
70.	09/03/2010-31/10/2010	Electricity sales invoices	Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd,	
71.	03/2010-10/2010	Electricity Transaction Notes	Hubei Power Electric Company	
72.	12/11/2010	Statement on the number of staff and annual salary	Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd,	
73.	20/04/2010	Statement on the heat unit conversion standard	China City Environment Protection Engineering Limited Company	
74.	20/11/2010	Spreadsheet of the Levelized cost of a new coal fired boiler to supply heat to the heat users itself	Anneng (Yicheng) Biomass Thermo-Electricity Co.Ltd,	
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Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
		http://www.chinapower.com.cn/articleattachment/1000/art1029355.pdf	Energy Resource Energy-saving Investment Co., Ltd	
76.	2004-2008	Average wages index and the fuel and power purchasing index in Hubei Province	National Bureau of Statistics of China	
77.	20/11/2010	PDD “Yicheng Biomass Cogeneration Project in Hubei Province, China”, Version 05	Emissionshandels Gesellschaft Bavaria GmbH	Final PDD