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# Validation Report

**The World Bank / Carbon Finance Business**  
**VALIDATION OF THE SMALL SCALE CDM-PROJECT:**  
**HUBEI ECO-FARMING BIOGAS PROJECT PHASE 1**

REPORT NO. 1 140 708

**2008, September 26**

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

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<b>Subject:</b> Validation of a small scale CDM Project			
<b>Accredited TÜV SÜD Unit:</b> TÜV SÜD Industrie Service GmbH Certification Body "climate and energy" Westendstr. 199 80686 Munich Germany		<b>TÜV SÜD Contract Partner:</b> Jiangsu TÜV Product Service Ltd., Shanghai Branch No. 88 Hengtong Road Shanghai 200 070 200020 Shanghai China	
<b>Client:</b> World Bank Ms. Joelle Chassard Dep. ENVCF 1818 H Street, NW MC Building, Washington DC 20043 USA		<b>Project Site(s):</b> 625 villages in 81 township s in 8 counties (Enshi, Lichuan, Jianshi, Badong, Xuan'en, Xianfeng, Laifeng, Hefeng) in Hubei Province, P.R. China. Site of project entity: Enshi City, Hubei Province (30°16'13"N and 109°28'30"E)	
<b>Project Title:</b> Hubei Eco-Farming Biogas Project Phase 1			
<b>Applied Methodology / Version:</b>		<b>Scope(s):</b> 1	
<b>AMS-I.C / Version 12</b> <b>AMS-III.R / Version 01</b>			
<b>First PDD Version:</b> Date of issuance: 2007-10-20 Version No.: 02 Starting Date of GSP 2007-11-06		<b>Final PDD version:</b> Date of issuance: 2008-07-27 Version No.: 05	
<b>Estimated Annual Emission Reduction:</b>		58,444 tCO <sub>2</sub> e	
<b>Assessment Team Leader:</b> Dr. Sven Kolmetz		<b>Further Assessment Team Members:</b> Dr. Thyge Weller Guide Wang	
<b>Summary of the Validation Opinion:</b>			
<input checked="" type="checkbox"/> The review of the project design documentation and the subsequent follow-up interviews have provided TÜV SÜD with sufficient evidence to determine the fulfilment of all stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM. Hence TÜV SÜD will recommend the project for registration by the CDM Executive Board in case letters of approval of all Parties involved will be available before the expiring date of the applied methodology(ies) or the applied methodology version respectively.			
<input type="checkbox"/> The review of the project design documentation and the subsequent follow-up interviews have not provided TÜV SÜD with sufficient evidence to determine the fulfilment of all stated criteria. Hence TÜV SÜD will not recommend the project for registration by the CDM Executive Board and will inform the project participants and the CDM Executive Board on this decision.			

## Abbreviations

<b>ACM</b>	Approved Consolidated Methodology
<b>AM</b>	Approved Methodology
<b>BM</b>	Build Margin
<b>CAR</b>	Corrective Action Request
<b>CDM</b>	Clean Development Mechanism
<b>CER</b>	Certified Emission Reduction
<b>CM</b>	Combined Margin
<b>CR</b>	Clarification Request
<b>DNA</b>	Designated National Authority
<b>DOE</b>	Designated Operational Entity
<b>EB</b>	Executive Board
<b>EF</b>	Emission Factor
<b>EIA / EA</b>	Environmental Impact Assessment / Environmental Assessment
<b>ER</b>	Emission reduction
<b>FSR</b>	Feasibility Study Report
<b>GHG</b>	Greenhouse gas(es)
<b>IRL</b>	Information Reference List
<b>IRR</b>	Internal Rate of Return
<b>KP</b>	Kyoto Protocol
<b>MP</b>	Monitoring Plan
<b>NDRC</b>	National Development and Reform Commission
<b>NGO</b>	Non Governmental Organisation
<b>OM</b>	Operational Margin
<b>PDD</b>	Project Design Document
<b>PP</b>	Project Participant
<b>TÜV SÜD</b>	TÜV SÜD Industrie Service GmbH
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>VVM</b>	Validation and Verification Manual

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## 1 INTRODUCTION

### 1.1 Objective

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

The project activity discussed by this validation report has been submitted under the project title:  
Hubei Eco-Farming Biogas Project Phase 1

### 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
- 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 by the EB published under <http://cdm.unfccc.int>
- 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)
- The applied approved methodology
- The technical environment of the project (technical scope)
- Internal and national standards on monitoring and QA/QC
- Technical guideline and information on best practice

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

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

The only purpose of a validation is its use during the registration process as part of the CDM project cycle. Hence, TÜV SÜD 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 aims at being a risk based approach and is based on the methodology developed in the Validation and Verification Manual, an initiative of Designated and Applicant Entities, which aims to harmonize the approach and quality of all such assessments.

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

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

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

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

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

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

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

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

## 2.1 Appointment of the Assessment Team

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

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

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

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

Name	Qualification	Coverage of technical scope	Coverage of sectoral expertise	Host country experience
<b>Dr. Sven Kolmetz</b>	<b>ATL</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Dr. Thyge Weller	GHG-A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Guide Wang	GHG-A	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>

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

**Dr. Thyge Weller** is lead auditor of the division energy certification at TÜV Industrie Service GmbH TÜV SÜD Group. In his position he implements verification and certifications processes for electricity production based on renewable sources. His technical specialization is in renewable energies, but covers also other CO2 emission reduction activities like landfill gas flaring. He has received extensive training in the CDM and JI validation processes and participated in several CDM and JI project assessments.

**Guide Wang** is an auditor for environmental management systems (according to ISO 14001) at Ji-angsu TUV Product Service Ltd. He is based in Shanghai. In his position he is responsible for the implementation of validation, verification and certifications audits for management systems. He has received training in the CDM validation process and participated already in several CDM project assessments as an auditor.

## 2.2 Review of Documents

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

## 2.3 Follow-up Interviews

On November 22 - 24, 2007 TÜV SÜD performed interviews on-site with project stakeholders at the office of the project entity and in 4 villages in two different parts of the project area to confirm selected information and to resolve issues identified in the first document review. The table below provides a list of all persons interviewed in the context of this on-site visit. Beside those persons all visited farmers have been interviewed.

Name	Organisation
Ms. Hongming Dong	Professor of Chinese Academy of Agricultural Sciences
Ms. Yue Li	Professor of Institute of Environment and Sustainable Development in Agriculture, CAAS.
Ms. Jin Liu	Agriculture Specialist of The World Bank Office Beijing
Ms. Monali Ranade	Consultant of The World Bank
Mr. Ruili Xie	General Manager of Hubei Qingjiang Zhongye Co., Ltd
Mr. Zhishao Tang	Ministry of Agriculture of the People's Republic of China
Mr. Shuanghe Qin	Energy Office of Agriculture Bureau of Hubei Province
Mr. Xiaoyou He	Energy Office of Agriculture Bureau of Hubei Province
Mr. Changmei He	Eco-energy Bureau of Enshi City
Mr. Shiquan Qi	Eco-energy Bureau of Enshi Prefecture
Mr. Dehua Yang	Eco-energy Bureau of Enshi Prefecture
Mr. Huafang Yang	Eco-energy Bureau of Enshi City
Mr. Lixin Dai	Eco-energy Bureau of Enshi Prefecture
Mr. Xingyu Zhou	Eco-energy Bureau of Laifeng City
Mr. Shuseng Chen	CDM Project Management Office of Enshi Prefecture
Mr. Xiao Chen	Foreign Affairs and Overseas Chinese Affairs Office of Enshi Prefecture

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

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

## **2.5 Internal Quality Control**

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

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

### 3 SUMMARY OF FINDINGS

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

#### History of the validation process

The first PDD version submitted by the client and used for the GSP process was version 2, dated October 20, 2007 and submitted in October 2007. Based on this documentation, a document review and a fact finding mission in form of an on-site audit was performed from October 22 to October 24, 2007. The visit started in the head quarter of the project entity and was continued during the next two days in two different regions within the project area. Various villages were visited. Afterwards, the client revised the PDD in several steps according to the requests indicated during the on-site visit and the following assessment work. The final PDD version 5 (dated July 27, 2008) was submitted in September 2008. It serves as the basis for the final assessment presented herewith. Changes are not considered to be significant with respect to the qualification of the project as a CDM project based on the two main objectives of the CDM, i.e. to achieve a reduction of anthropogenic GHG emissions and to contribute to a sustainable development.

#### Project description

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

By the Hubei Eco-Farming Biogas Project 33.000 farm households in the Enshi Prefecture will be supplied with household biogas digesters, directly built under or next to the swine stables (4 - 6 pigs). The biogas digesters have all the same proven design (variations include three different sizes and some location dependent options) and will replace today's common deep pit systems. The digester allows converting the manure to biogas which will be used in the kitchen, for lighting purposes and for heating. The coal consumption of the households is thereby reduced by about 50% (coal is still needed to prepare pig food).

There are several objectives of the project concerning the local population:

- local health and living conditions are improved by removal of the open pits and by the use of clean biogas for kitchen stoves, lighting and heating
- the improved manure treatment will reduce water contamination and result in odorless sludge to be used as fertilizer
- even if there is an upfront investment by the farmer, the project will reduce household expenditures over time (reduced coal consumption)

On a larger scale, the project supports the Chinese goals of reducing greenhouse gas emissions compared to a business-as-usual scenario by avoiding methane gas emissions (use of digester) and by reducing coal consumption (use of biogas).

#### Findings

In total the assessment team expressed one open issue, 8 Clarification Requests and 19 Corrective Action Requests.

The open issue (missing LoAs) was resolved by provision of LoAs by the Chinese and Dutch DNA.

Several formal deviations were noted and resolved. They covered the methodology version (CAR 8, CAR 9), wrong parameter descriptions / values (CAR 12, CAR 13), numbering of tables (CAR 17) and wrong wordings (CAR 19).

Other CARs / CRs were related to missing information. In all cases, such information was delivered as update of the PDD and / or by separate documents. The topics included the proofs of additionality (CR 5, CR 6), the construction status of the digesters (CR 1), the type / format of project coordinates (CR 2, CAR 2), approval process information (CAR 1), the existence of different digester types (CAR 6), the description of “other barriers” (CAR 10), the description of leakage (CAR 15), debundling (CR 3) and the reason for using IPCC parameters (CR 4).

Three CARs referred to incorrect information in the PDD: pressure control devices and flow meters are not installed (CAR 5, CAR 18), and the individual household is no project participant (CAR 7). The respective passages in the PDD have been changed.

The remaining CARs and CRs refer to unclear or inconsistent information. Some figures in the PDD were not consistent (digester numbers [CAR 3], pig numbers [CAR 4], funding by farmers [CAR 11], sample sizes [CAR 16]). They were all adjusted. The document “Survey of baseline information on Household Biogas Digesters projects” was updated (CAR 14), the role of participants clarified (CR 8) and a remark on gas burner efficiency removed (CR 7).

### **Baseline calculation**

The calculation of the baseline emissions followed the procedures described in the small scale methodologies AMS-I.C Version 12 and AMS III.R Version 01. Two sources of GHG emissions have been considered under the baseline condition: CH<sub>4</sub> emission from manure management and CO<sub>2</sub> emission from combustion of coal. According to AMS I.C. the simplified baseline is the coal consumption, in the absence of the project activity. Baseline emission is the coal consumption that would have been used in the absence of the project activity times an emission coefficient for replaced coal. According to version 1 of AMS III.R, the baseline scenario is the anaerobic decay of pig manure. Baseline emissions are calculated ex ante using the amount of manure that would decay anaerobically in the absence of the project activity.

As emission coefficient for the displaced fossil fuel national specific values were adopted according to the data provided by NDRC (National Development and Reform Committee). For raw coal, this corresponds to 25,8 to C / TJ. For calculating methane emission from deep pit, there are no national specific values for Bo and VS available. Therefore, IPCC default values were applied.

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

### **Additionality**

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

The Hubei Eco-Farming biogas project does not create any financial income, in contrast to many other CDM projects. Its focus is the improvement on local health and living conditions, the reduction of water contamination and the reduction of household expenditures for farmers. However, upfront investments are needed from farmers. This cash investment - even if it seems quite moderate – is a big barrier in the poor agricultural area with low household cash income.

A national biogas program exists in China with the goal of installing biogas digesters in rural areas. This program has also been applied in Hubei province, and more than one million digesters exist already. The high costs, however, have led to the fact, that only the richer part of the farmer population was able to afford such an investment.

The goal of the project is to make biogas digesters affordable to farmers with lower cash income despite the rising costs of new digesters. According to the project baseline survey this goal will be achieved: the average household cash income of the proposed project households is around RMB 5,015 (about US\$ 660), which is 25% lower than the average household cash income of RMB 6,726 (about US\$885) for those who have already built biogas digesters in the project counties. This is achieved by two effects which are both consequences of the CDM support:

- The transaction of CER-revenue to the farmers will be a stable source of revenue for a substantial time period and alleviate repayment of loans needed to build the digester.
- The project management office has developed a loan guarantee mechanism by using the expected carbon income; this makes access to financing from rural credit cooperatives easier.

It is evident that there are still many farmers with an even smaller income who are still not able to provide the needed investment money. But at least an additional tier of the rural households is now able to own a biogas digester. Windfall gains from richer farmers are excluded by individual selection of eligible households.

Revenues from CER sales are the only income source for all involved participants. It is therefore evident, that without consideration of CDM the project would never have been started. The involvement of 33.000 households makes also clear that government authorities with their local agencies have to be involved. This resulted in the present setup with Hubei Qingjiang Zhongye Company Ltd as central organization hub and Enshi Energy Bureau as interface to local county agencies.

This was the background on which the management board of Hubei Qingjiang Zhongye Company Ltd decided at October 16, 2006 to become involved in such a CDM project. The summary of the board meeting was provided to the DOE. After that time project preparations started. Enshi Energy Bureau decided on March 25, 2007, to officially start the project as of April 1, 2007. Early consideration of the CDM project can therefore be taken as granted. The project can be considered as additional for a low to medium income group of farmers.

## Monitoring

The project applies the approved monitoring methodology AMS-I.C "Thermal energy for the user with or without electricity" and the monitoring methodology AMS-III.R "Methane recovery in agricultural activities at household / small farm level". The selected monitoring methodologies are applicable for the project activity as they involve a renewable energy technology that supplies small farms with thermal energy that displaces coal. At the same time, methane from manure is recovered and destroyed that otherwise would be emitted to the atmosphere.

The parameters that need to be monitored ex-post for projects with emission reductions of less than 5 to of CO<sub>2</sub> per digester are listed in the following table. They are required either by both methodologies used or only by methodology III.R. All of those parameters are listed and well defined in the PDD; they are part of the monitoring activity. The parameter "average temperature" is not explicitly required by the methodologies but is used to select the annual MCF (methane conversion factor) from the IPCC guidelines.

Methodology		Monitoring Request	Defined in PDD	Monitoring Approach
I.C	III.R			
17 c(i)	11 a	Number of digesters in operation	y	Total
17 c(ii)	11 b	Annual operating hours of digesters	y	Sample
18	11 c	Amount of biomass input	y	Sample
	11 c	Average animal population	y	Calculated
	11 d	Proper soil application	y	Sample
-	-	<i>Average temperature</i>	y	<i>external source</i>

Concerning the number of systems in operation, methodology III.R asks for “survey methods”. The project entity goes beyond this requirement and controls the systems in total. This is certainly more conservative and therefore accepted by the DOE. A database has been set up containing information of each household. The completeness of this list is verified by crosschecks with the sales of biogas stoves. This list is updated by the county energy bureau. It will also be used as basis for the repayment of CER sales revenues.

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

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

The following table presents all key information on this process:

<b>webpage:</b> <a href="http://www.netinform.de/KE/Wegweiser/Guide2_1.aspx?ID=3982&amp;Ebene1_ID=26&amp;Ebene2_ID=1198&amp;mode=1">http://www.netinform.de/KE/Wegweiser/Guide2_1.aspx?ID=3982&amp;Ebene1_ID=26&amp;Ebene2_ID=1198&amp;mode=1</a>	
<b>Starting date of the global stakeholder consultation process:</b> 2007-11-06	
<b>Comment submitted by:</b> None	<b>Issues raised:</b> -
<b>Response by TÜV SÜD:</b> -	

## 5 VALIDATION OPINION

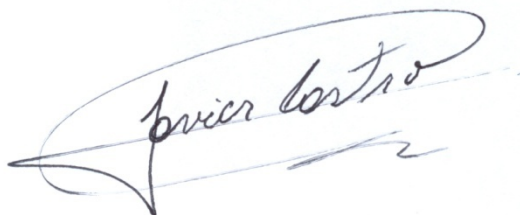
TÜV SÜD has performed a validation of the following proposed small scale CDM project activity:  
Hubei Eco-Farming Biogas Project Phase 1

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

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

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

Munich, 2008-09-11



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

Munich, 2008-09-11



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Assessment Team Leader



## **Annex 1: Validation Protocol**

# Validation Protocol

Project Title: Hubei Eco-Farming Biogas Project Phase I

Date of Completion: 13/Aug/2008

Number of Pages: 46



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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
<b>A. General description of small-scale project activity</b>				
<b>A.1. Title of the small-scale project activity</b>				
A.1.1. Does the used project title clearly enable to identify the unique CDM activity?	1,2	Yes, the project title is "Hubei Eco-Farming Biogas Project Phase I", the project is titled with the location and energy type of the project, so it is clearly identified	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.1.2. Are there any indication concerning the revision number and the date of the revision?	1,2	Yes, the available PDD is indicated with version 05 dated 27/07/2008	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.1.3. Is this consistent with the time line of the project's history?	1,2	Yes, this is consistent.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>A.2. Description of the small-scale project activity</b>				
A.2.1. Is the description delivering a transparent overview of the project activities?	1,7	Yes, total 33000 biogas digesters will be installed for this project by replacing the existent "deep pit" manure management systems.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.2. What proofs are available demonstrating that the project description is in compliance with the actual situation or planning?	1,7,8,1 2,13,2 4,25,2 6,	<p>The project is a replacement of the existent "deep pit" systems with digester.</p> <p>The following document can deliver evidence to the project:</p> <ul style="list-style-type: none"> <li>-The feasibility study report was performed by Foreign Economic Cooperation Center of Ministry of Agriculture in 2007.</li> <li>-The EIA report was performed by China Agriculture University in February, 2007</li> <li>- CDM Project Trust Deed countersigned by Hubei Qingjiang Zhongye Co., Ltd and Eco-energy Bureau of Enshi City on 28/Oct/2007</li> <li>- CDM Project Trust Deed for Farmers and project participant list countersigned by Eco-energy Bureau of Xuan'en City and Mayangzhai Village, Gaoluo Township, Xuan'en City on 16/Oct/2007</li> </ul>	CAR 1	<input checked="" type="checkbox"/>

## Validation Protocol

Project Title: Hubei Eco-Farming Biogas Project Phase I

Date of Completion: 13/Aug/2008

Number of Pages: 46



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		<p>From on site review, some biogas digesters are in operation now, some of the biogas digesters are still under construction.</p> <p><b><u>Corrective Action Request No.1</u></b></p> <p><b>The feasibility study report and EIA report are in the approval process but have not yet been approved by the authority.</b></p>		
A.2.3. Is the information provided by these proofs consistent with the information provided by the PDD?	1,7,8,1 2,13,2 4,25,2 6,	There is no contradiction between the information provided by these proofs and the PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.4. Is all information presented consistent with details provided by further chapters of the PDD?	1,6	<p><b><u>Clarification Request No.1</u></b></p> <p>There is a need to check the status of digester construction to make sure whether one third of them can be completed in 2007 and whether two thirds can be completed until June, 2008. The total biogas production in 2008 should be reconfirmed according to the actual schedule.</p>	<b>CR 1</b>	<input checked="" type="checkbox"/>
A.2.5. Does the description of the technology to be applied provide sufficient and transparent input to evaluate its impact on the greenhouse gas balance?	1,2,7,8 ,24	<p>The existent "deep pit" manure management system will be replaced by the biogas digester system which is employed in the project.</p> <p>Thus, the technology to be applied in the project obviously can reduce the greenhouse gas emission.</p>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.6. Is the brief explanation how the project will reduce greenhouse gas emission transparent and suitable?	1,2	Yes, the explanation is concise and understandable. The produced biogas used for cooking and water heating and thereby replaces coal. Greenhouse gas emission will be reduced by reduced coal consumption and by burning biogas (methane).	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>A.3. Project participants</b>				
A.3.1. Is the form required for the indication of project participants correctly applied?	1,28,2 9,30	The form is correctly applied. Hubei Qingjiang Zhongye Company Ltd, The International Bank for Reconstruction and Development and the Netherland DNA are considered as the project partici-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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		pants.		
A.3.2. Is the participation of the listed entities or Parties confirmed by each one of them?	1,28,2 9,30	<b>Open Issue</b> The LoA of Chinese DNA and Netherland DNA have to be provided to the DOE before submitting the project to registration.	Open Issue	<input checked="" type="checkbox"/>
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)?	1,28,2 9,30	Yes, the information of the above project participants is listed in Annex 1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>A.4. Technical description of the small-scale project activity</b>				
<b>A.4.1. Location of the small-scale project activity</b>				
A.4.1.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	1,7,8	The project is located in Enshi Autonomous Prefecture, Hubei Province. <b><u>Corrective Action Request No.2</u></b> The project coordinate's resolution should be second. The latitude of the project coordinate should be corrected. <b><u>Corrective Action Request No.3</u></b> The quantity of biogas digesters for 10m <sup>3</sup> in Table A2 is not compliant to the data in A.2 and the feasibility study report. <b><u>Clarification Request No.2</u></b> There is a need to clarify the coordinate for every county capital in this project, not only the coordinate of the location of the prefecture.	CAR 2 CAR 3 CR 2	<input checked="" type="checkbox"/>
A.4.1.2. How is it ensured and/or demonstrated, that the project proponents can implement the project at this site (ownership, licenses, contracts etc.)?	1,7,8,2 5,26	The Environmental Impact Assessment report was issued by China Agriculture University in February, 2007 The Feasibility Study Report was performed and issued by the Foreign Economic Cooperation Center of Ministry of Agriculture in 2007. The conclusion of the above draft reports shows a positive opinion	See CAR 1	<input checked="" type="checkbox"/>

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		on the project, though they have not yet been approved by the authority.  Please see CAR 1		
<b>A.4.2. Type and category(ies) and technology/measure of the small-scale project activity</b>				
A.4.2.1. To which type(s) does the project activity belong to? Is the type correctly identified and indicated?	1,2,3	Yes. The project activity utilizes the methane which is produced by the biogas digester, which falls into the scope 1-renewable energy	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.2.2. To which category (ies) does the project activity belong to? Is the category correctly identified and indicated?	1,2,3	Yes. The project activity falls into the category: Type I.C.-renewable energy technology that supplies thermal energy to users, and Type III.R.-Methane recovery in agricultural activities at household/small farm level.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.2.3. Does the technical design of the project activity reflect current good practices?	1,19,24	The project will construct a biogas digester which meets the requirement of national standard and is appropriate for the targeted small farming households.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.2.4. Does the implementation of the project activity require any technology transfer from Annex-I-countries to the host country (ies)?	1,7	No, the biogas digester is a simple and mature system. There is no need for technology transfer from Annex-I-countries.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.2.5. Is the technology implemented by the project activity environmentally safe?	1,8,26	No environmental problems are to be expected. The conclusion of the EIA report is positive, though it has not yet been approved by the authority. Please see CAR 1	See CAR 1	<input checked="" type="checkbox"/>
A.4.2.6. Is the information provided in compliance with actual situation or planning?	1,6,7,19,24	<b><u>Corrective Action Request No.4</u></b> It is mentioned that each household raise around 4~6 pigs in Section A.4.2., while in Section B.2. , each household raise <b>at least</b> 4~6 pigs. This does not comply. <b><u>Corrective Action Request No.5</u></b> According to the PDD, a pressure control device will be installed	CAR 4 CAR 5 CAR 6	<input checked="" type="checkbox"/>

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		to ensure proper gas flow at the flare. This is not the fact. The farmer will manually adjust the gas flow rate according to a pressure indicator which can be found on the site. <b><u>Corrective Action Request No.6</u></b> More than the one type digester described in the PDD was found on the project site. Other digester types are not mentioned in the PDD.		
A.4.2.7. 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?	1,7	The commonly used technology for manure used in the area is "deep pit" system. Hence, the project definitely would result in a better performance than the common practice.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.2.8. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1,7	We do not expect that there will be a substitution. The feasibility study report of the project clearly shows that this technology is suitable to be employed at the site.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.2.9. Does the project require extensive initial training and maintenance efforts in order to be carried out as scheduled during the project period?	1,10	Training on biogas installation, supervision of biogas digester and stove operation as well as facilities maintenance are required and will be provided to the local farmers by the technicians of the township service station.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.2.10. Is information available on the demand and requirements for training and maintenance?	1,10	The detail training requirements and proposal was defined and issued on 15/Sep/2007	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.2.11. Is a schedule available for the implementation of the project and are there any risks for delays?	1,6	At present the project seems to be delayed against the PDD statements. Please see CR 1	See CR 1	<input checked="" type="checkbox"/>
<b>A.4.3. Estimated amount of emission reductions over the chosen crediting period</b>				
A.4.3.1. Is the form required for the indication of projected emission reductions correctly applied?	1,2	Yes. The form is correctly applied according to SSC PDD format revision Guideline.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.3.2. Are the figures provided consistent	1	Please see CR 1	See CR	<input checked="" type="checkbox"/>

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with other data presented in the PDD?			1											
A.4.3.3. Are the figures consistent with the small-scale criteria for the used Type?	1,2	Yes, the thermal generation capacity of the proposed project is consistent with the small-scale criteria for the renewable sources.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
A.4.4. Public funding of the small-scale project activity														
A.4.4.1. Is the information provided on public funding provided in compliance with the actual situation or planning as available by the project participants?	1	Yes, there is no public funding from Annex I countries	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
A.4.4.2. Is all information provided consistent with the details given in remaining chapters of the PDD (in particular annex 2)?	1	Yes, the statement is consistent with the PDD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
A.4.5. Confirmation that the small-scale project activity is not a debundled component of a large scale project activity														
A.4.5.1. Is there a registered small-scale CDM project activity or an application to register another small-scale CDM project activity: with the following characteristics:	1,2,12,13	<table><tr><td>Debundling checklist</td><td>Yes / No</td></tr><tr><td>The same project participants?</td><td>No</td></tr><tr><td>In the same project category and technology/measure?</td><td>No</td></tr><tr><td>Registered within previous two years? Or in registration process?</td><td>No</td></tr><tr><td>Whose boundary is within 1 km of the project boundary of the small scale project activity under consideration?</td><td>No</td></tr></table> <p><b><u>Clarification Request No.3</u></b></p> <p>A statement is needed whether it is a debundled project or not.</p> <p><b><u>Corrective Action Request No.7</u></b></p> <p>The definition of the role of each individual biogas household in Section A.4.5 is wrong. Only Hubei Qingjiang Zhongye Company is the project participant.</p>	Debundling checklist	Yes / No	The same project participants?	No	In the same project category and technology/measure?	No	Registered within previous two years? Or in registration process?	No	Whose boundary is within 1 km of the project boundary of the small scale project activity under consideration?	No	CR 3  CAR 7	<input checked="" type="checkbox"/>
Debundling checklist	Yes / No													
The same project participants?	No													
In the same project category and technology/measure?	No													
Registered within previous two years? Or in registration process?	No													
Whose boundary is within 1 km of the project boundary of the small scale project activity under consideration?	No													

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A.4.5.2. If the answer to all the above question is 'Yes' then does the total size of the small scale project activity combined with previously registered small scale CDM project activity exceeds the limits of small scale CDM project activities?	1	Not Applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>								
<b>B. Application of a baseline and monitoring methodology</b>												
<b>B.1. Title and reference of the approved baseline and monitoring methodology applied to the small-scale project activity</b>												
B.1.1.1. Are reference number, version number, and title of the baseline and monitoring methodology (or methodologies, if in conjunction with AMS III.R) clearly indicated?	1,2,3	AMS I.C and AMS III.R are applied for the project. <b><u>Corrective Action Request No.8</u></b> The version of the applied methodologies is not mentioned in the PDD.	CAR 8	<input checked="" type="checkbox"/>								
B.1.1.2. Is the applied version / are the applied versions the most recent one(s) and / or is this version / are these versions still applicable?	1,2,3	<b><u>Corrective Action Request No.9</u></b> Version 10 of AMS I.C. is applied for this project as indicated in page 43 of the PDD, while the latest version of AMS I.C. is 12.	CAR 9	<input checked="" type="checkbox"/>								
<b>B.2. Justification of the choice of the project category</b>												
B.2.1. Is the applied methodology / combination of methodologies considered the most appropriate one?	1,2,3	See CAR 8 and CAR 9	See CAR 8 CAR 9	<input checked="" type="checkbox"/>								
Integrate the required amount of sub-checklists on the applicability criteria as given by AMS I.C and comment on at least every line answered with "No"; <a href="#">Replace blue text</a>												
B.2.1.1. <a href="#">Criterion 1: Project comprises renewable energy technologies that supply individual households or users with thermal energy that displaces fossil fuels. Biomass based cogeneration systems that produce heat and</a>	1,2	<table border="1"> <tr> <th>Applicability checklist</th> <th>Yes / No / NA</th> </tr> <tr> <td>Criterion discussed in the PDD?</td> <td>Yes</td> </tr> <tr> <td>Compliance provable?</td> <td>Yes</td> </tr> <tr> <td>Compliance verified?</td> <td>Yes</td> </tr> </table>	Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No / NA											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											

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electricity are included.		The biogas digesters provide biogas for cooking and other thermal energy needs for individual household, by replacing coal.										
B.2.1.2. Criterion 2: Where thermal generation capacity is specified by the manufacturer, it shall be less than 45MW.	1,2,20,27,32	<table><tr><td>Applicability checklist</td><td>Yes / No / NA</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> <p>The thermal energy production capacity for the bundled project is about 42.2MWth, which is lower than 45 MW.</p>	Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No / NA											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											
B.2.1.3. Criterion 3: For co-fired systems the aggregate installed capacity (specified for fossil fuel use) of all systems affected by the project activity shall not exceed 45MWth.	1,2	<table><tr><td>Applicability checklist</td><td>Yes / No / NA</td></tr><tr><td>Criterion discussed in the PDD?</td><td>NA</td></tr><tr><td>Compliance provable?</td><td>NA</td></tr><tr><td>Compliance verified?</td><td>NA</td></tr></table>	Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	NA	Compliance provable?	NA	Compliance verified?	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No / NA											
Criterion discussed in the PDD?	NA											
Compliance provable?	NA											
Compliance verified?	NA											
B.2.1.4. Criterion 4: Cogeneration projects that displace/avoid fossil fuel consumption in the production of thermal energy (e.g. steam or process heat) and/or electricity shall use this methodology. The capacity of the project in this case shall be the thermal energy production capacity, i.e. 45MWth.	1,2	<table><tr><td>Applicability checklist</td><td>Yes / No / NA</td></tr><tr><td>Criterion discussed in the PDD?</td><td>NA</td></tr><tr><td>Compliance provable?</td><td>NA</td></tr><tr><td>Compliance verified?</td><td>NA</td></tr></table>	Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	NA	Compliance provable?	NA	Compliance verified?	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No / NA											
Criterion discussed in the PDD?	NA											
Compliance provable?	NA											
Compliance verified?	NA											
B.2.1.5. Criterion 5: In the case of project activities that involve the addition of renewable energy units at an existing renewable energy facility, the total	1,2	<table><tr><td>Applicability checklist</td><td>Yes / No / NA</td></tr><tr><td>Criterion discussed in the PDD?</td><td>NA</td></tr></table>	Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
Applicability checklist	Yes / No / NA											
Criterion discussed in the PDD?	NA											

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capacity of the units added by the project should be lower than 45 MWth and should be physically distinct from the existing units.		Compliance provable?		NA		
		Compliance verified?		NA		
Integrate the required amount of sub-checklists on the applicability criteria as given by AMS III.R and comment on at least every line answered with “No”; Replace blue text						
B.2.1.6. Does the project category comprise recovery and destruction of methane from manure and wastes from agricultural activities that would be decaying anaerobically emitting methane to the atmosphere in the absence of the project activity?	1, 3, 6, 7	Yes. The proposed project is applied to change swine manure management system from deep pit storage to anaerobic digestion in biogas digester. The recovery methane is produced by the digester, and used for cooking and heating water.		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
B.2.1.7. Are methane emissions prevented by installing methane recovery and combustion systems to an existing source of methane emissions or changing the management practice of a biogenic waste or raw material in order to achieve the controlled anaerobic digestion equipped with methane recovery and combustion system?	1, 3, 6, 7, 24	Yes. The anaerobic digester will be constructed for methane recovery in the project. The methane burner like methane oven, lamp, and shower, will be used after the digester is into operation.		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
B.2.1.8. Is the project limited to measures at individual households or small farms (e.g. installation of a domestic biogas digester). If methane recovery systems are included: do they achieve an annual emission reduction of less than or equal to 5 tonnes of CO2e per system?	1, 3, 6, 7, 24, 32	Yes. The methane that is produced in the project is used for domestic cooking and heating water. Less than 2 tonnes of CO2e will be produced annually per digester system.		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
B.2.1.9. Is the sludge handled aerobi-	1, 3, 6	Yes. The biogas sludge will be used as the fertilizer for vegetable		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

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	cally? In case of soil application of the final sludge are there proper conditions and procedures to ensure that there are no methane emissions?		and crops under aerobic condition.		
B.2.1.10.	Are measures used (e.g. combusted or burnt in a biogas burner for cooking needs) to ensure that all the methane collected by the recovery system is destroyed?	1, 3, 6, 7, 24	Yes. The methane will be used for cooking and heating water to ensure that all the methane collected is destroyed. Please see CR 7	See CR 7	<input checked="" type="checkbox"/>
B.2.1.11.	Is the aggregated annual emission reduction of all systems included less than or equal to 60 kt CO2 equivalent?	1,3	Yes. The expected aggregated annual emission reduction for all digester systems is 584440.4 tones CO2 equivalent.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B.3. Description of the project boundary</b>					
B.3.1.	Does the project boundary include physical, geographical site where the project activity takes place?	1,2,3,6	Yes. The project boundary covers biogas digester and biogas burners, which are described in PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.3.2.	In case of AMS III.R: Is the project boundary the physical, geographical site of the methane recovery and combustion systems?	1,2,3	Yes. The project boundary is defined in the PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.3.3.	Do the spatial and technological boundaries as verified on-site comply with the discussion provided by / indication included to the PDD?	1,2,3	Yes. There is no contradiction between on site verification result and the PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B.4. Description of baseline and its development</b>					
Integrate questions concerning the determination of the additionality as provided by the methodology applied or insert the module provided when applying the "additionality tool"; Replace blue text, if necessary					
B.4.1.	In case of AMS III.R: Are baseline emis-	1,3	Yes. Baseline emission is calculated ex ante using the amount of	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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	sions calculated ex ante using the amount of the waste or raw material that would decay anaerobically in the absence of the project activity with the most recent IPCC tier 2 approach?		swine manure that would decay anaerobically in the absence of the project activity with the most recent IPCC tier-2 approach.		
B.4.2.	In case of AMS III.R: Are country/regional specific values used if available?	1,3	No. For there is no country/regional specific value, 2006 IPCC default value is applied in the project.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.3.	In case of AMS III.R: Is the amount of waste or raw materials that would decay anaerobically in the absence of the project activity determined by survey of a sample group of households/small farms with a confidence level of 95%?	1,3,17, 21	Yes. Total 5015 households (2485 biogas households and 2530 households without biogas digester) were surveyed in the baseline survey. It can meet the confidence level of 95%.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.4.	In case of AMS III.R: Does the survey determine the baseline animal manure management practices applied?	1,3,17, 21	Yes. The baseline animal manure management practices were surveyed during in the baseline survey.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.5.	In case of AMS III.R: Is only that portion of the manure considered which would decay anaerobically in the absence of the project activity established by the survey?	1,3,17, 21	Yes. Only the swine manure was considered in the baseline survey.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.6.	For renewable energy technologies that displace technologies using fossil fuels, the simplified baseline is the fuel consumption of the technologies that would have been used in the absence of the project activity times an emission coefficient for the fossil fuel displaced. IPCC default values for emission coefficients may be used. Is this the case in this project activity, and if yes, has this baseline been identified	1,2	The simplified baseline is selected. Baseline emission is the coal consumption that would have taken place in the absence of the project activity times an emission coefficient for replaced coal, and swine manure is left to decay anaerobically within project boundary and methane is emitted to atmosphere in the absence of the project.  <b><u>Clarification Request No.4</u></b> It should be clarified why IPCC default values, not NDRC default values, for emission coefficient is used to calculate baseline emission.	CR 4	<input checked="" type="checkbox"/>

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	correctly? (For cogen projects, see B.4.2.)			
B.4.7.	Cogeneration projects shall use one of the four options given in point 8 of AMS I.C. version 12 for baseline emission calculations depending on technology that would have been used to produce thermal energy and electricity in the absence of the project activity. Is this a cogeneration project, and if yes, has the correct option been chosen?	1,2	Not applicable (project is no cogeneration project)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
B.4.8.	In the case of project activities that involves the addition of renewable energy units at an existing renewable energy production facility, where the existing and new units share the use of common and limited renewable resources (e.g. biomass residues), the potential for the project activity to reduce the amount of renewable resource available to, and thus thermal energy production by, existing units must be considered in the determination of baseline emissions, project emissions, and/or leakage, as relevant. Is this the case in this project activity, and if yes, has it been considered?	1,2	Not applicable	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
B.4.9.	For project activities that retrofit or modify an existing facility for renewable generation, has the correct baseline scenario been chosen as per the methodology?	1,2	Not applicable	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
B.4.10.	Have all technically feasible baseline scenario alternatives to the project activity been identified and discussed by the	1,2	Use of a simplified baseline is sufficient based on the fuel consumption of the technologies that would have been used in the absence of the project	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

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PDD? Why can this list be considered as being complete?				
B.4.11. Does project identify correctly and excludes those options not in line with regulatory or legal requirements?	1,2,6,7	There is no other option except the approach that would have been used in the absence of the project. This approach is certainly in line with regulatory and legal requirements	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.12. Have applicable regulatory or legal requirements been identified?	1,2,3	There is no other option except the approach that would have been used in the absence of the project. This approach is certainly in line with regulatory and legal requirements	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.13. Does the PDD identify the most likely baseline scenario in absence of the project activity?	1,2,3	The simplified baseline is selected. Baseline emission is the coal consumption that would have taken place in the absence of the project activity times an emission coefficient for replaced coal, and swine manure is left to decay anaerobically within project boundary and methane is emitted to atmosphere in the absence of the project.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.14. Is this identification supported by official and/or verifiable documents (e.g. studies, web pages, certificates, etc)?	1,2,3	There is no other option except the approach that would have been used in the absence of the project. This approach is certainly in line with regulatory and legal requirements	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.15. Is the identified baseline scenario in line with regulatory or legal requirements?	1,2,3	There is no other option except the approach that would have been used in the absence of the project. This approach is certainly in line with regulatory and legal requirements	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>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 small-scale CDM project activity:</b>				
Integrate questions concerning the determination of the additionality when applying the "additionality tool"; Replace blue text, if necessary				
B.5.1. In case of applying step 2 / investment analysis of the additionality tool: Is the analysis method identified appropriately (step 2a)?	1	Not Applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.2. In case of Option I (simple cost analysis):	1	Not Applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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	Is it demonstrated that the activity produces no economic benefits other than CDM income?				
B.5.3.	In case of Option II (investment comparison analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?	1	Not Applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.4.	In case of Option III (benchmark analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?	1	Not Applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.5.	In case of Option II or Option III: Is the calculation of financial figures for this indicator correctly done for all alternatives and the project activity?	1	Not Applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.6.	In case of Option II or Option III: Is the analysis presented in a transparent manner including publicly available proofs for the utilized data?	1	Not Applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.7.	In case of applying step 3 (barrier analysis) of the additionality tool: Is a complete list of barriers developed that prevent the different alternatives to occur?	1	Not Applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.8.	In case of applying step 3 (barrier analysis): Is transparent and documented evidence provided on the existence and significance of these barriers?	1	Not Applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.9.	In case of applying step 3 (barrier analysis): Is it transparently shown that the execution of at least one of the alternatives is not prevented by the identified bar-	1	Not Applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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riers?										
B.5.10. Have other activities in the host country / region similar to the project activity been identified and are these activities appropriately analyzed by the PDD (step 4a)?	1	Not Applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
B.5.11. 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	Not Applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
B.5.12. Is it appropriately explained how the approval of the project activity will help to overcome the economic and financial hurdles or other identified barriers (step 5)?	1	Not Applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
If the additionality tool has not been used please answer B.5.13 to B.5.18										
B.5.13. 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?	1,33	<b><u>Clarification Request No.5</u></b> No evidence to proof that CDM has been seriously considered in the decision to proceed with the project activity has been provided to the validator. Please clarify this issue.	CR 5	<input checked="" type="checkbox"/>						
B.5.14. Is a complete list of barriers developed that prevents the project activity to occur?	1,4,34,35	The barriers are analyzed according to “Appendix B of the simplified modalities and procedures for small-scale CDM project activities” <b><u>Corrective Action Request No.10</u></b> Only three types of barriers were listed and discussed in the PDD, while the type “other barriers” was not being mentioned (see latest attachment A to appendix B).	CAR10	<input checked="" type="checkbox"/>						
B.5.15. Does this list include at least one of the following barriers?	1,4,34,35	<table><tr><td>Barrier</td><td>Discussed?</td><td>Verifiable?</td></tr><tr><td>Investment</td><td>Yes</td><td>Yes</td></tr></table>	Barrier	Discussed?	Verifiable?	Investment	Yes	Yes	See CAR10	<input checked="" type="checkbox"/>
Barrier	Discussed?	Verifiable?								
Investment	Yes	Yes								

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		<table><tr><td>Technological</td><td>Yes</td><td>Yes</td></tr><tr><td>Due to prevailing practice</td><td>Yes</td><td>Yes</td></tr><tr><td>Other</td><td>No</td><td>No</td></tr></table> <p>Please see CAR 10</p>	Technological	Yes	Yes	Due to prevailing practice	Yes	Yes	Other	No	No		
Technological	Yes	Yes											
Due to prevailing practice	Yes	Yes											
Other	No	No											
B.5.16. Does the discussion sufficiently take into account relevant national and/or sectoral policies?	1,7,15,16,17,21,34,35,	<p><b><u>Corrective Action Request No.11</u></b></p> <p>The data about government counterpart funding and investment by participant farmers are not in compliance with the data in the feasibility study report</p> <p><b><u>Clarification Request No.6</u></b></p> <p>To prove additionality it has to be shown whether the existing bio-gas digesters have been built under different conditions and whether they can be compared with the biogas plants realised by the CDM-project.</p>	CAR11 CR 6	<input checked="" type="checkbox"/>									
B.5.17. Is transparent and documented evidence provided on the existence and significance of these barriers?	1,7,15,16,17,34,35,	<p>Yes, the following documentation exists to give evidence to the most significant barrier of the project (financing barrier of the individual households):</p> <ul style="list-style-type: none"><li>- Farmer Project Financing Capacity Analysis Report of Enshi Prefecture and the Database of Farmer Project Financing Capacity Survey</li><li>- The Database of Baseline survey</li><li>- Feasibility study report</li></ul>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>									
B.5.18. Is it appropriately explained how the approval of the project activity will help to overcome the identified barriers?	1,7	Yes, The CER revenue will reduce the overall costs for the individual farmer by one third. Furthermore it will provide incentives to attract counterpart funding and broaden the loan access from local banks.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>									
<b>B.6. Emissions reductions</b>													
Integrate questions concerning methodological choices and selection of options, if necessary													
B.6.1. <i>Explanation of methodological choices</i>													

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B.6.1.1. Is it explained how the procedures provided in the methodology/ies are applied by the proposed project activity?	1,2,3	Yes, this is explained in detail. The baseline emission calculation follows AMS I.C. version12 and AMS III.R. version 01, and the project emission calculation follows AMS III.R. version 01	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
B.6.1.2. Is every selection of options offered by the methodology/ies correctly justified and is this justification in line with the situation verified on-site?	1,2,3	Not applicable, there is no available option in the methodologies to calculate the emission reduction.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
B.6.1.3. Determination of project emissions according to AMS I.C (Comment on any line answered “No”) Replace blue text										
B.6.1.3.1. Component 1: emissions from project activity	1,2	<table><tr><td>Project emission checklist</td><td>Yes / No</td></tr><tr><td>Component discussed in the PDD?</td><td>Yes</td></tr><tr><td>Formulae correctly applied?</td><td>Yes</td></tr></table>	Project emission checklist	Yes / No	Component discussed in the PDD?	Yes	Formulae correctly applied?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Project emission checklist	Yes / No									
Component discussed in the PDD?	Yes									
Formulae correctly applied?	Yes									
B.6.1.4. Determination of project emissions according to AMS III.R (Comment on any line answered “No”) Replace blue text										
B.6.1.5. Component 2: emissions from project activity	1,3	<table><tr><td>Project emission checklist</td><td>Yes / No</td></tr><tr><td>Component discussed in the PDD?</td><td>Yes</td></tr><tr><td>Formulae correctly applied?</td><td>No</td></tr></table> <p><b><u>Corrective Action Request No.12</u></b></p> <p>In the formula to calculate the project emission, the parameter B<sub>0</sub> refers to the CH<sub>4</sub> production capacity from manure for chicken, not swine.</p>	Project emission checklist	Yes / No	Component discussed in the PDD?	Yes	Formulae correctly applied?	No	CAR12	<input checked="" type="checkbox"/>
Project emission checklist	Yes / No									
Component discussed in the PDD?	Yes									
Formulae correctly applied?	No									
B.6.1.6. Are the formulae required for the determination of project emissions correctly presented, enabling a complete identification of parameters to be used and / or monitored?	1,2,21,31,36	<p><b><u>Corrective Action Request No.13</u></b></p> <p>The formula to calculate methane emission factor for deep pit manure management system is not correct.</p> <p>An old fraction oxidized for raw coal is referred in the calculation.</p> <p><b><u>Corrective Action Request No.14</u></b></p> <p>The document “Survey of baseline information on Household Bio-gas Digesters projects in Enshi Prefecture, Hubei Province” has to</p>	CAR13 CAR14	<input checked="" type="checkbox"/>						

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		be updated: 1. Number of households involved in baseline survey is not correct 2. Number of digesters to be installed in the project is not correct 3. Amongst others the derivation of E that used to calculate the sample size has to be defined		
B.6.1.7. Are the formulae required for the determination of leakage emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1,2,3,1 9,20, 21,22, 27,31, 36	<b><u>Corrective Action Request No.15</u></b> The leakage of the project was not discussed in the PDD. <b><u>Clarification Request No.7</u></b> A document should be provided to DOE to prove that the efficiency of the biogas burner is more than 99.95%	CAR15 CR 7	<input checked="" type="checkbox"/>
B.6.1.8. Are the formulae required for the determination of emission reductions correctly presented?	1,2,3,3 1,36	Please see CAR 15	CAR15	<input checked="" type="checkbox"/>
<b>B.6.2. Data and parameters that are available at validation</b>				
B.6.2.1. Is the list of parameters presented in chapter B.6.2 considered to be complete with regard to the requirements of the applied methodology?	1,2,3	<b><u>Corrective Action Request No.16</u></b> The percentage mentioned in the definition of parameters $BG_{coal,l,k}$ and $PG_{coal,l,k}$ does not correspond to the actual number of project households	CAR16	<input checked="" type="checkbox"/>
B.6.2.2. Comment on any line answered with "No"	Replace blue text			
B.6.2.2.1. [AMS I.C] Parameter Title:  Demonstration that the quantity of available biomass in the region, is at least 25% larger than the quantity of biomass that is utilised including the	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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project activity																						
B.6.2.2.2. [AMS I.C] Parameter Title: EFCO2 the CO2 emission factor per unit of energy of the fuel that would have been used in the baseline (cogeneration) plant in (tCO2 / TJ), obtained from reliable local or national data if available, otherwise, IPCC default emission factors are used.	1,2,3,2 2,31,3 6	<table><tr><th>Data Checklist</th><th>Yes / No / NA</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table> <p><b>Please see CAR 13</b></p>	Data Checklist	Yes / No / NA	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	No	Has this value been verified?	Yes	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	See CAR13	☑
Data Checklist	Yes / No / NA																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided?	No																					
Has this value been verified?	Yes																					
Choice of data correctly justified?	Yes																					
Measurement method correctly described?	Yes																					
B.6.2.2.3. [AMS I.C] Parameter Title: $\eta_{th}$ the efficiency of the plant using fossil fuel that would have been used in the absence of the project activity.  Does the PDD determine efficiency by adopting option (a), (b) or (c)?	1	Not applicable	☑	☑																		
B.6.2.2.4. [AMS I.C] Parameter Title: $\eta_{Cogen}$ For cogen plants: the total efficiency (thermal and electrical both included) of the cogeneration plant using fossil fuel that would have been used in the absence of the project activity. Efficiency should be calculated as total energy produced (electricity and steam/heat extracted) divided by thermal energy of the fuel used.	1	Not applicable	☑	☑																		

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Does the PDD determine efficiency by adopting option (a), (b) or (c)?																						
B.6.2.2.5. [AMS I.C] Parameter Title: EGhistorical For retrofit/modification activities: average of historical thermal energy delivered by the existing facility (see methodology for method of calculation)	1	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																		
B.6.2.2.6. [AMS I.C] Parameter Title: DATEBaselineRetrofit For retrofit/modification activities: point in time when the existing equipment would need to be replaced in the absence of project activity (options a, b, or c)	1	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																		
B.6.2.2.7. [AMS III.R] Parameter Title: LF <sub>AD</sub> Methane leakage from anaerobic digesters	1,3,22,31,36	<table><tr><th>Data Checklist</th><th>Yes / No / NA</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table>	Data Checklist	Yes / No / NA	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	Yes	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Data Checklist	Yes / No / NA																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided?	Yes																					
Has this value been verified?	Yes																					
Choice of data correctly justified?	Yes																					
Measurement method correctly described?	Yes																					

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<p>B.6.2.2.8. [AMS III.R] Parameter Title: GWP<sub>CH4</sub></p> <p>Global Warming Potential of CH4</p>	1,3,22, 31,36	<table><tr><th>Data Checklist</th><th>Yes / No / NA</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table>	Data Checklist	Yes / No / NA	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	Yes	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Data Checklist	Yes / No / NA																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided?	Yes																					
Has this value been verified?	Yes																					
Choice of data correctly justified?	Yes																					
Measurement method correctly described?	Yes																					
<p>B.6.2.2.9. [AMS III.R] Parameter Title: B<sub>0</sub></p> <p>maximum methane producing po- tential of the manure treated in the biogas digesters</p>	1,3,22, 31,36	<table><tr><th>Data Checklist</th><th>Yes / No / NA</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>No</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table>	Data Checklist	Yes / No / NA	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	No	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	Yes	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	See CAR 12	<input checked="" type="checkbox"/>
Data Checklist	Yes / No / NA																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	No																					
Source clearly referenced?	Yes																					
Correct value provided?	Yes																					
Has this value been verified?	Yes																					
Choice of data correctly justified?	Yes																					
Measurement method correctly described?	Yes																					

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		Please see CAR 12																				
B.6.2.2.10.[AMS III.R] Parameter Title: VS  annual amount of volatile solids treated in the biogas digesters on dry matter weight basis	1,3,22,36	<table><tr><th>Data Checklist</th><th>Yes / No / NA</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table>	Data Checklist	Yes / No / NA	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	Yes	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Data Checklist	Yes / No / NA																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided?	Yes																					
Has this value been verified?	Yes																					
Choice of data correctly justified?	Yes																					
Measurement method correctly described?	Yes																					
B.6.3. Ex-ante calculation of emission reductions																						
B.6.3.1. Is the projection based on the same procedures as used for future monitoring?	1,2,3	Yes. The procedure is the same.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																		
B.6.3.2. Are the GHG calculations documented in a complete and transparent manner?	1,2,3,2 0,21,2 2,31	Please see CAR 15 <b><u>Corrective Action Request No.17</u></b> <b>Table B13 is used to list the CH4 emission from leakage of anaerobic digesters for each householder in page 37 of the PDD, but this table cannot be found in the PDD.</b>	CAR17 See CAR15	<input checked="" type="checkbox"/>																		
B.6.3.3. If there is more than one component of the project activity, then, are emission reduction calculations	1,2,3,2 1	Yes, the project GHG emission reduction is calculated by combining GHG reduction of manure management system into CO2 emission of biogas usage by replacing coal for cooking and water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																		

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provided separately for each component?		heating.		
B.6.3.4. Is the data provided in this section consistent with data as presented in other chapters of the PDD?	1,2,3	Yes, there is no contradiction with the other chapters in the PDD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B.6.4. Summary of the ex-ante estimation of emission reductions</b>				
B.6.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	1,2,3	Yes, the project will deliver a significant GHG emission reduction than the baseline. Please see CR 1	See CR 1	<input checked="" type="checkbox"/>
B.6.4.2. Is the form/table required for the indication of projected emission reductions correctly applied?	1,2,3	Yes, the form is correctly applied	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.6.4.3. If the project activity involves more than one component, is separate table included for each of the component.	1,2,3	Yes, but this would make no sense regarding the 33,000 biogas digesters.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.6.4.4. Do these values comply with small-scale criteria for every year?	1,2,3	The emission reduction of every system is lower than 5 tonnes CO2 a year. This complies with small-scale criteria.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.6.4.5. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	1	Yes, the schedule that in B 6.4 complies with the others in PDD. Please see CR 1	See CR 1	<input checked="" type="checkbox"/>
B.6.4.6. Is the data provided in this section in consistency with data as presented in other chapters of the PDD?	1	Yes, it is no contradiction with the others in the PDD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B.7. Application of the monitoring methodology and description of the monitoring plan</b>				
<b>B.7.1. Data and parameters monitored</b>				
B.7.1.1. Is the list of parameters presented in chapter B.7.1 considered to	1,2,3	Yes, all the parameters required by AMS I.C. and AMS III.R. are listed in chapter B.7.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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be complete with regard to the requirements of the applied methodology?				
B.7.1.2. [AMS III.R] Is the number of systems operating recorded at program start?	1,3	The number of system in operation will be monitored by the project coordinator after the start of the project.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.7.1.3. [AMS I.C] For all biomass projects: Periodic demonstration that the quantity of available biomass in the region, is at least 25% larger than the quantity of biomass that is utilised including the project activity	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.7.1.4. [AMS I.C] Does the PDD clearly state which of the given options for monitoring (a, b or c) is applied?	1,2	Yes, option C is selected, for the emission reduction per household is less than 5 tonnes of CO2 a year.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.7.1.5. [AMS I.C] Option (a) – Parameter 1: HGy Net quantity of steam/heat supplied by the project activity, by metering the energy produced by a sample of the systems (TJ)  If fossil fuel is used the thermal energy metered should be adjusted to deduct thermal energy from fossil fuels using the specific fuel consumption and the quantity of fossil fuel consumed  The amount of thermal energy or electricity generated using biomass fuels calculated as per paragraph 20	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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(AMS I.C. v12) shall be compared with the amount of thermal energy or electricity generated calculated using specific fuel consumption and amount of each type of biomass fuel used. The lower of the two values should be used to calculate emission reductions.				
<p>B.7.1.6. [AMS I.C] Option (b) – Parameter 1: HGy For cogen plants: net quantity of steam/heat supplied by the project activity (TJ)</p> <p>If fossil fuel is used the thermal energy metered should be adjusted to deduct thermal energy from fossil fuels using the specific fuel consumption and the quantity of fossil fuel consumed</p> <p>The amount of thermal energy or electricity generated using biomass fuels calculated as per paragraph 20 (AMS I.C. v11) shall be compared with the amount of thermal energy or electricity generated calculated using specific fuel consumption and amount of each type of biomass fuel used. The lower of the two values should be used to calculate emission reductions.</p>	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<p>B.7.1.7. [AMS I.C] Option (b) – Parameter 2: For cofired cogeneration projects, the</p>	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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amount of fossil fuel input														
<p>B.7.1.8. [AMS I.C] Option (b) – Parameter 3: EGy For cogen plants: Amount of electricity supplied by the project activity (GWh)</p> <p>If fossil fuel is used the electricity generation metered should be adjusted to deduct electricity generation from fossil fuels using the specific fuel consumption and the quantity of fossil fuel consumed</p> <p>The amount of thermal energy or electricity generated using biomass fuels calculated as per paragraph 20 (AMS I.C. v12) shall be compared with the amount of thermal energy or electricity generated calculated using specific fuel consumption and amount of each type of biomass fuel used. The lower of the two values should be used to calculate emission reductions.</p>	1,2	Not applicable		<input checked="" type="checkbox"/>										
<p>B.7.1.9. [AMS I.C] Option (c) – Parameter 1: If emission reductions are less than 5tCO2e/yr:</p> <p>recording annually the number of systems operating (evidence of continuing operation, such as on-going rental/lease payments could be a</p>	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></table>	Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	CAR18	<input checked="" type="checkbox"/>
Monitoring Checklist	Yes / No													
Title in line with methodology?	Yes													
Data unit correctly expressed?	Yes													
Appropriate description of parameter?	Yes													
Source clearly referenced?	Yes													

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substitute); and .		<table><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>No</td></tr></table> <p><b><u>Corrective Action Request No.18</u></b> <b>In the PDD the existence of flow meters is mentioned. Such flow meters, however, will not be installed.</b></p>	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?	No												
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?	No																											
B.7.1.10. [AMS I.C] Option (c) – Parameter 2: If emission reductions are less than 5tCO2e/yr:  estimating the annual hours of operation of an average system, if necessary using survey methods. Annual hours of operation can be estimated from total output (e.g. tonnes of grain dried) and output per hour if an accurate is available.	1,2,31	<table><tr><td>Monitoring Checklist</td><td>Yes / No</td></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided 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>	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		<input checked="" type="checkbox"/>
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																											

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<p>B.7.1.11. [AMS I.C] For projects where only biomass or biomass and fossil fuel are used: the amount of biomass and fossil fuel input</p> <p>If more than one type of biomass fuel is consumed each shall be monitored separately.</p>	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<p>B.7.1.12. [AMS I.C] For projects consuming biomass: specific fuel consumption of each type of fuel (biomass or fossil) (t fuel/MWh)</p>	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<p>B.7.1.13. [AMS I.C] Parameter Title: TE<sub>y</sub> For projects that involve the addition of new units: the total thermal energy produced in year y by all units, existing and new project units (TJ)</p>	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<p>B.7.1.13.1.[AMS I.C] Parameter Title: WTE<sub>y</sub> For projects that involve the addition of new units: the estimated thermal energy that would have been produced by existing units (installed before the project activity) in year y in the absence of the project activity (TJ), where <math>WTE_y = \text{MAX}(WTE_{\text{actual},y}, WTE_{\text{estimated},y})</math></p>	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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B.7.1.13.2.[AMS I.C] Parameter Title: WTEactual,y For projects that involve the addition of new units: the actual, measured thermal energy production of the existing units in year y (TJ)	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.7.1.13.3.[AMS I.C] Parameter Title: WTEestimated,y For projects that involve the addition of new units: the estimated thermal energy that would have been produced by the existing units under the observed availability of the renewable resource for year y (TJ)	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.7.1.13.4.[AMS I.C] Parameter Title: EGestimated, y For retrofit/modification activities: the estimated thermal energy that would have been produced by the existing units under the observed availability of renewable resource for year y (TJ)	1,2	There are no retrofit / modification activities. Therefore not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.7.1.13.5.Are there any parameters missing or unclear for future monitoring in order to determine emission reductions?	1,2,3	Please see CAR 18	See CAR18	<input checked="" type="checkbox"/>
<b>B.7.2. Description of the monitoring plan</b>				
B.7.2.1. Is the operational and management structure clearly described and in compliance with the envisioned	1,6,7,2 3	The operation and management structure was defined and provided to DOE. Project management office will be set on prefecture and county level. The existent agriculture service station will be	CAR19	<input checked="" type="checkbox"/>

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situation?		charged for after service. The contracts of project participant and related parties have not yet been signed. <b><u>Corrective Action Request No.19</u></b> In Section B 7.2, it is mentioned that the project households are spread in 81 counties, actually only 8 counties are involved in the project.		
B.7.2.2. Are responsibilities and institutional arrangements for data collection and archiving clearly provided?	1,23	The project entity will charge the data collection. Enshi Energy Bureau will keep the data and provide it to DOE.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.7.2.3. Does the monitoring plan provide current good monitoring practice?	1,2,3	<b>Please see CAR 18</b>	See CAR18	<input checked="" type="checkbox"/>
B.7.2.4. [AMS III.R] Will the size of the monitoring sample be large enough to guarantee a confidence level of 95%?	1,3	The confidence level of 95% is defined to estimate annual operation hours of biogas digester. About 400 participant farmers will be surveyed to estimate the swine population. It also can meet the confidence level of 95%.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.7.2.5. If applicable: Does annex 4 provide useful information enabling a better understanding of the envisioned monitoring provisions?	1	Not applicable, for there is no information in Annex 4.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B.8. Date of completion of the application of the baseline study and monitoring methodology an the name of the responsible person(s)/entity(ies)</b>				
B.8.1.1. Is there any indication of a date when the baseline was determined?	1	Yes, Date of completion of baseline study is 31/05/2007	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.8.1.2. Has dd/mm/yyyy format been used to indicate the date.	1	Yes, the correct format has been used.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.8.1.3. Is this consistent with the time line of the PDD history?	1	Yes. There is no contradiction with the others in the PDD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.8.1.4. Is the information on the per-	1	Yes, Ms Dong Hongmin and Ms. Li Yue from Institute of Environ-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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son(s) / entity (ies) responsible for the application of the baseline and monitoring methodology provided consistent with the actual situation?		ment and Sustainable Development in Agriculture, Chinese Academy of Agricultural Sciences, Institute of Environment were listed as the persons responsible for the application of baseline and monitoring methodology.		
B.8.1.5. Is information provided whether this person / entity is also considered a project participant?	1	<b>Clarification Request No.8</b> There is a need to clarify whether Ms Dong Hongmin and Ms Li Yue or their institution are project participants or not.	CR 8	<input checked="" type="checkbox"/>
<b>C. Duration of the project activity / crediting period</b>				
<b>C.1. Duration of the project activity</b>				
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	1,37	The starting date is 01/04/2007, and the expected operational lifetime is 20 years. Both dates are reasonable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>C.2. Choice of the crediting period and related information</b>				
C.2.1. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	1	Fixed 10 years is selected	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
C.2.2. Has dd/mm/yyyy format been used to indicate the start date of the crediting period.	1	Yes, 15/11/2008 OR the date of registration which is later.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>D. Environmental impacts</b>				
<b>D.1. If required by the host Party, documentation on the analysis of the environmental impacts of the project activity:</b>				
D.1.1. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been approved?	1,8,26	EIA is a must for the project in China. The EIA was performed by China Agriculture University in February, 2007. But the EIA has not yet been approved. Please see CAR 1	See CAR 1	<input checked="" type="checkbox"/>
D.1.2. Has the analysis of the environmental	1,8,26	Yes, the environmental impact of the project activity was suffi-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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impacts of the project activity been sufficiently described?		ciently described according to the (not yet approved) EIA report in the PDD		
D.1.3. Will the project create any adverse environmental effects?	1,8,26	The potential environmental issues were described in the PDD. They are considered to be very low. Adequate training to the local farmers and the monitoring of the project will mitigate the potential environmental risks.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.4. Were transboundary environmental impacts identified in the analysis?	1,8,26	No transboundary environmental impacts were identified.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party</b>				
D.2.1. Have the identified environmental impacts been addressed in the project design sufficiently?	1,8,26	Yes. The environmental impacts were discussed in the PDD, and no significant negative environment impacts have been identified.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.2.2. Does the project comply with environmental legislation in the host country?	1,8,26	Please see CAR 1	See CAR 1	<input checked="" type="checkbox"/>
<b>E. Stakeholders' comments</b>				
<b>E.1. Brief description how comments by local stakeholders have been invited and compiled</b>				
E.1.1. Have relevant stakeholders been consulted?	1,8,11,18	Yes, a series of project stakeholder consultations took place. More than 700 farmers and other stakeholders were interviewed and / or participated in meetings	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	1,9,11	In the first stage information leaflets were used. Afterwards the proposed farmers were directly addressed. This is appropriate in the specific context of the project.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process	1,11	There is no regulations/laws requirement for stakeholder consultation in China.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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been carried out in accordance with such regulations/laws?				
E.1.4. Is the undertaken stakeholder process that was carried out described in a complete and transparent manner?	1,9,11,18	Yes. Confirmed with the detailed documents and comments received by the stakeholders. The process is described in a complete and transparent manner.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>E.2.Summary of the comments received</b>				
E.2.1. Is a summary of the received stakeholder comments provided?	1,18	Yes, a summary of the comments received is included in chapter E.2 of the PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>E.3.Report on how due account was taken of any comments received</b>				
E.3.1. Has due account been taken of any stakeholder comments received?	1,11,18	All stakeholder comments are positive. To improve the training situation more focus has been laid on the technical training resources. To cope with the financing problems of the farmers an improved concept of payment guarantees is under discussion, but not yet finalized.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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<b>F. Annexes 1 - 4</b>					
<b>F.1. Annex 1: Contact Information</b>					
F.1.1.	Is the information provided consistent with the one given under section A.3?	1,28,29,30	Hubei Qingjiang Zhongye Company Ltd , The International Bank for Reconstruction and Development and Netherland DNA are considered as the project participants. This is consistent with section A.3.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.1.2.	Is the information on all private participants and directly involved Parties presented?	1,28,29,30	Yes, all project participants are being mentioned.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>F.2. Annex 2: Information regarding public funding</b>					
F.2.1.	Is the information provided on the inclusion of public funding (if any) in consistency with the actual situation presented by the project participants?	1	There is no public funding from Annex I countries	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.2.2.	If necessary: Is an affirmation available that any such funding from Annex-I- countries does not result in a diversion of ODA?	1	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>F.3. Annex 3: Baseline information</b>					
F.3.1.	If additional background information on baseline data is provided: Is this information consistent with data presented by other sections of the PDD?	1,17,21	Yes, the additional information provided is consistent	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.3.2.	Is the data provided verifiable? Has sufficient evidence been provided to the validation team?	1,9,17,21	Yes. The data is in conformity with the baseline survey report and the feasibility study report	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.3.3.	Does the additional information	1,17,	Yes, the additional information is given in chapter B.6.1, B.6.2 and		<input checked="" type="checkbox"/>

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substantiate / support statements given in other sections of the PDD?	21	B.6.3.	<input checked="" type="checkbox"/>	
<b>F.4. Annex 4: Monitoring information</b>				
F.4.1. If additional background information on monitoring is provided: Is this information consistent with data presented in other sections of the PDD?	1	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.4.2. Is the information provided verifiable? Has sufficient evidence been provided to the validation team?	1	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.4.3. Do the additional information and / or documented procedures substantiate / support statements given in other sections of the PDD?	1	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

<b>G. Programme of activities</b>				
<b>G.1. Conditions for methodology use</b>				
G.1.1. In the specific case of biomass project activities: does the project use biomass residues only or biomass from dedicated plantations complying with the applicability conditions of AM0042?	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.1.2. In the specific case of biomass project activities: does the determination of leakage follow the general guidance for leakage in small-scale biomass project activities (attachment C of appendix B) or following the prescriptions included in the leakage section of AM0042?	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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G.1.3. In case the project activity involves the replacement of equipment, and the leakage effect of the use of the replaced equipment in another activity is neglected, because the replaced equipment is scrapped: will an independent monitoring of scrapping of replaced equipment be implemented?	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>G.2. Applicability</b>				
G.2.1. Was no power generated at the project site prior to the implementation of the project activity (i.e. the project plant does not substitute or amend any existing power generation at the project site)?	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.2.2. Can the geographic and system boundaries for the relevant electricity grid be clearly identified and is information on the characteristics of the grid?	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.2.3. Is biomass used by the project facility stored for no longer than one year?	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.2.4. Are dedicated plantations newly established as part of the project activity for the purpose of supplying biomass exclusively to the project?	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.2.5. Is the biomass from the plantation not chemically processed prior to combustion in the project plant? (it may be processed mechanically or be dried)	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.2.6. Is it ensured that the site preparation does not cause longer-term net emissions from soil carbon?	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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G.2.7. Will the land area of the dedicated plantation be planted by direct planting and/or seeding?	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.2.8. Will regeneration after harvest occur either by direct planting or natural sprouting?	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.2.9. Will grazing not occur within the plantation?	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.2.10. Is no irrigation undertaken for the biomass plantations?	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.2.11. Has the land area where the dedicated plantation will be established prior to project implementation been severely degraded and would it have not been used for any other agricultural or forestry activity in absence of the project activity?	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.2.12. Can the land degradation be demonstrated using one or more of the following indicators: (a) Vegetation degradation (b) Soil degradation (c) Anthropogenic influences?	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.2.13. Are the most plausible baseline scenarios • For power generation, electricity generated by the project would have been generated by existing and/or new power plants in the grid; and • For the use of biomass residues,	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>G.3. Leakage</b>				
G.3.1. [AMS I.C] Was it demonstrated that the use of the biomass residues will not result in	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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increased use of fossil fuels or other GHG emissions elsewhere?				
G.3.2. [AMS I.C] Where project participants wish to use approaches L2, L3 or L4 to assess leakage effects: was the geographical boundary of the region and clearly defined and documented in the CDM-PDD?	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.3.3. [AMS I.C] Does the defined region cover a radius of at least 20 km but not more than 200 km?	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.3.4. [AMS I.C] Will a leakage penalty be applied to the quantity of biomass residues, for which project participants cannot demonstrate that the use of the biomass residue does not result in leakage?	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.3.5. [AMS I.C] Are the formulae required for the determination of leakage emissions specified for "programmes of activity" correctly presented and applied?	1,2	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
<b><u>Open Issue</u></b> The LoA of Chinese DNA and Netherland DNA have to be provided to the DOE before submitting the project to registration.	A.3.2.	The LOA of Chinese DNA was provided to DOE The LOA of Netherland DNA was provide to DOE	<input checked="" type="checkbox"/> The LoAs from Chinese DNA and Netherland DNA are provided to the DOE.
<b><u>Corrective Action Request No.1</u></b> The feasibility study report and EIA report are in the approval process but have not yet been approved by the authority.	A.2.2 A.4.1.2. A.4.2.5. D.1.1. D.2.2.	FS and EIA was approved, Approval letters will be submitted with revised PDD	<input checked="" type="checkbox"/> The FS and EIA approval were provided to the DOE.
<b><u>Corrective Action Request No.2</u></b> The project coordinate's resolution should be second. The latitude of the project coordinate should be corrected.	A.4.1.1	PDD was revised according to the DOE suggestion.	<input checked="" type="checkbox"/> The coordinate's resolution of the county capital was in second.
<b><u>Corrective Action Request No.3</u></b> The quantity of biogas digesters for 10m3 in Table A2 is not compliant to the data in A.2 and the feasibility study report.	A.4.1.1	In Version 5 of PDD, the original Table A2 changed to Table A3, because a new table on Project location was added after Table A1 following the DOE recommendation. The number of biogas digesters for 10m3 in Table A2 is consistent with the data in A.2 and the feasibility study report, which is 14,181. Numbers of biogas digesters for 10 m <sup>3</sup> in new Table A3 was revised.	<input checked="" type="checkbox"/> The figures in Table A3 are corrected.
<b><u>Corrective Action Request No.4</u></b>	A.4.2.6	Revised to "4~6 pigs" both in Section A4.2and Section	<input checked="" type="checkbox"/> They were updated and in

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It is mentioned that each household raise around 4~6 pigs in Section A.4.2., while in Section B.2. , each household raise at least 4~6 pigs. This does not comply.		B2.	compliance.
<b><u>Corrective Action Request No.5</u></b> According to the PDD, a pressure control device will be installed to ensure proper gas flow at the flare. This is not the fact. The farmer will manually adjust the gas flow rate according to a pressure indicator which can be found on the site.	A.4.2.6	Added text in Version 5 of PDD "A pressure indication device is installed to ensure proper control of gas flow at the flare, by the user."	<input checked="" type="checkbox"/> It was updated according to the actual status.
<b><u>Corrective Action Request No.6</u></b> More than the one type digester described in the PDD was found on the project site. Other digester types are not mentioned in the PDD.	A.4.2.6	Added text in Version 5 of the PDD to explain biogas digester design will be based on the technical standards. The preferred and recommended sample design is displayed in PDD but minor modifications are acceptable.	<input checked="" type="checkbox"/> It was updated which can meet the requirement.
<b><u>Corrective Action Request No.7</u></b> The definition of the role of each individual biogas household in Section A.4.5 is wrong. Only Hubei Qingjiang Zhongye Company is the project participant.	A.4.5.1.	Delete the text "individual biogas household is a project participant" in version 5 of PDD.	<input checked="" type="checkbox"/> The related context was updated. Only Hubei Qingjiang Zhongye Company is listed as the project owner.
<b><u>Corrective Action Request No.8</u></b> The version of the applied methodologies is not mentioned in the PDD.	B.1.1.1. B.2.1.	Added the version for both methodologies I.C and III.R in Version 5 of PDD. The new excel sheet on calculation of thermal generation capacity was be provided to DOE with the Version 5 of PDD.	<input checked="" type="checkbox"/> AMS.I.C (version12) and AMS.III.R (version 01) are applied for the project activity.
<b><u>Corrective Action Request No.9</u></b> Version 10 of AMS I.C. is applied for this project as indicated in page 43 of the PDD, while the latest version of AMS I.C. is 12.	B.1.1.2. B.2.1.	Revised Version 10 of AMS I.C to Version 12 of AMS I.C in Version 2 of the PDD.  To keep the consistence, the methodology title of AMS I.C was revised to "Thermal energy for the user with or	<input checked="" type="checkbox"/> The version of AMS I.C. is corrected to version 12.

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		without electricity" in all sections in Version 5 of PDD.	
<b><u>Corrective Action Request No.10</u></b> Only three types of barriers were listed and discussed in the PDD, while the type "other barriers" was not being mentioned (see latest attachment A to appendix B).	B.5.14. B.5.15.	According to the Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities, four types of barriers were listed in the PDD Version 5.  In Version 5 of PDD, information on other barriers was added.	<input checked="" type="checkbox"/> "Other barriers" is added in the PDD, and the information is verified by the validator
<b><u>Corrective Action Request No.11</u></b> The data about government counterpart funding and investment by participant farmers are not in compliance with the data in the feasibility study report	B.5.16.	The data were revised according to FS.  The purpose of the evidence "construction cost issued by Hubei Country Energy office in Mar, 2008" is to support CR No 6. This is to prove that the costs of biogas digester installation keep increasing over the past several years and the financing gap for farmers is increasing accordingly.	<input checked="" type="checkbox"/> The data was corrected according to the FSR and baseline survey result.
<b><u>Corrective Action Request No.12</u></b> In the formula to calculate the project emission, the parameter B0 refers to the CH <sub>4</sub> production capacity from manure for chicken, not swine.	B.6.1.5. B.6.2.2.9.	Revised "chicken" to "pigs" in the PDD.	<input checked="" type="checkbox"/> The parameter is corrected.
<b><u>Corrective Action Request No.13</u></b> The formula to calculate methane emission factor for deep pit manure management system is not correct.  An old fraction oxidized for raw coal is referred in the calculation.	B.6.1.6. B.6.2.2.2.	The formula to calculate methane emission factor for deep pit manure management system is corrected.  Fraction oxidized "1.00" was adopted instead of "0.98" in revised PDD.	<input checked="" type="checkbox"/> The formula to calculate methane emission factor for deep pit manure management system and the fraction oxidized is corrected.
<b><u>Corrective Action Request No.14</u></b> The document "Survey of baseline information on Household Biogas Digesters projects	B.6.1.6.	The document of "Survey of baseline information on Household Biogas Digesters projects in Enshi Prefecture, Hubei Province" was revised and provided to	<input checked="" type="checkbox"/> The related information was corrected in the baseline survey report.

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<p>in Enshi Prefecture, Hubei Province” has to be updated:</p> <ol style="list-style-type: none"> <li>1. Number of households involved in baseline survey is not correct</li> <li>2. Number of digesters to be installed in the project is not correct</li> <li>3. Amongst others the derivation of E that used to calculate the sample size has to be defined</li> </ol>		<p>DOE.</p> <p>The less 18.7 and 18.9 was the actual E value based on sampled population. However, 30 and 50, which were originally selected to decide on sample size, were used as the E value, the less E means that the sample size for baseline survey is large enough and it is more conservative to do so.</p> <p>In the section B7.1 and B7.2 of PDD Version 5, the sample size for monitoring was changed from “400” to “2750” which is determined based on 18.7 of E values follow up the recommendation of DOE</p> <p>The emission reduction calculation and baseline emission report in excel were provided to the DOE with revised PDD.</p>	
<p><b><u>Corrective Action Request No.15</u></b></p> <p>The leakage of the project was not discussed in the PDD.</p>	<p>B.6.1.7. B.6.1.8. B.6.3.2.</p>	<p>Add text to explain that it is necessary to calculate leakage in the PDD.</p> <p>The text is “For methodology I.C (Version 12) titled “Thermal Energy for user under Type I, Renewable energy projects,” and methodology III.R (version 1) titled “Methane recovery in agricultural activities at household/small farm level”, if the energy generating equipment is transferred from another activity or if the existing equipment is transferred to another activity, leakage is to be considered. For this project, it is not the case. Therefore, leakage will not be considered. “</p>	<p><input checked="" type="checkbox"/> The leakage was listed and specified in the PDD.</p>
<p><b><u>Corrective Action Request No.16</u></b></p> <p>The percentage mentioned in the definition of parameters <math>BG_{coal,I,k}</math> and <math>PG_{coal,I,k}</math> does not</p>	<p>B.6.2.1.</p>	<p>Revised the percentage “8.3%” to “7.5%” In the PDD Ver 5.</p>	<p><input checked="" type="checkbox"/> The percentage was corrected.</p>

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correspond to the actual number of project households			
<p><b><u>Corrective Action Request No.17</u></b></p> <p>Table B13 is used to list the CH4 emission from leakage of anaerobic digesters for each householder in page 37 of the PDD, but this table can not be found in the PDD.</p>	B.6.3.2.	<p>It is wrong numbered. Revised Table B8" to Table B 13" in the PDD Ver 5.</p> <p>Keeping the different number of digit after decimal point in different places resulted in the inconsistency between the data in Table B15 of PDD and the excel file of ER calculation, we have updated the data by using two digital number for all tables/calculation and the related data on Table A4, B9, B10, B11, B13, B15, B16, and B17, and relevant data in the text were revised in Version 5 of PDD</p>	<p><input checked="" type="checkbox"/> The related information was corrected in the PDD. The formula were added in the baseline emission calculation excel spreadsheet.</p>
<p><b><u>Corrective Action Request No.18</u></b></p> <p>In the PDD the existence of flow meters is mentioned. Such flow meters, however, will not be installed.</p>	B.7.1.9. B.7.1.13.4. B.7.2.3.	<p>According to methodology III.R. CH4 flow is not required for monitoring. So the reference to flow meter was deleted in the PDD Ver 5.</p>	<p><input checked="" type="checkbox"/> The parameter was deleted</p>
<p><b><u>Corrective Action Request No.19</u></b></p> <p>In Section B 7.2, it is mentioned that the project households are spread in 81 counties, actually only 8 counties are involved in the project.</p>	B.7.2.1.	<p>Revised "81 counties" to "81 townships". In the PDD Ver. 5.</p>	<p><input checked="" type="checkbox"/> The data is corrected.</p>
<p><b><u>Clarification Request No.1</u></b></p> <p>There is a need to check the status of digester construction to make sure whether one third of them can be completed in 2007 and whether two thirds can be completed until June, 2008. The total biogas production in 2008 should be reconfirmed according to the actual schedule.</p>	A.2.4. A.4.2.11. A.4.3.2. B.6.4.1. B.6.4.5.	<p>The name list of households which have built digester in 2007 was provided and the numbers was also provided in PDD Ver. 5.</p> <p>To simplify the validation and future verification, starting data of crediting period is changed to Nov 15, 2008. The database on biogas digester construction registration is being established.</p>	<p><input checked="" type="checkbox"/> The information is provided to the DOE and verified by the validator.</p>

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<b><u>Clarification Request No.2</u></b> There is a need to clarify the coordinate for every county capital in this project, not only the coordinate of the location of the prefecture.	A.4.1.1	Revised in PDD, Page 5	<input checked="" type="checkbox"/> The coordinate of every county was added in the PDD.
<b><u>Clarification Request No.3</u></b> A statement is needed whether it is a debundled project or not.	A.4.5.1.	The conclusion in A 4.5 was revised to be "This proposed project is the first CDM project of Qingjiang Zhongye Company, and there are no other similar projects in the project region. Therefore, the Hubei Eco-Farming Biogas Project is not a debundled component of any larger scale project activity."	<input checked="" type="checkbox"/> The conclusion was added in the PDD.
<b><u>Clarification Request No.4</u></b> It should be clarified why IPCC default values, not NDRC default values, for emission coefficient is used to calculate baseline emission.	B.4.6.	For calculating methane emission from deep pit, there are no national specific values for Bo and VS available. Therefore, IPCC default values were applied. Added one sentence to in PDD "Default IPCC values for Bo and VS will be applied because no national specific values"  For calculating CO2 emission from coal combustion, national specific values were adopted according to the data provided by NDRC. The website is <a href="http://www.ccchina.gov.cn">www.ccchina.gov.cn</a>  VS, Bo and MCF were added to Table B8	<input checked="" type="checkbox"/> The reason was defined and verified by the validator.
<b><u>Clarification Request No.5</u></b> No evidence to proof that CDM has been seriously considered in the decision to proceed with the project activity has been provided to the validator. Please clarify this issue.	B.5.13.	The Project participant decided to prepare and undertake household biogas digester CDM project according to the project company board meeting agreements reached on October 16, 2006. After the project preparation, the project activity began from April 1 of 2007. It is indicate the early consideration of the CDM project.	<input checked="" type="checkbox"/> From the company meeting minutes dated 16/Oct/2006, the project entity decided to apply for CDM project to improve the project, which is much earlier than the project starting date. Hence, we can

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		Summary of board meeting was provided to DOE The first construction contract and cement purchase contract for the CDM project was provided to DOE.	arrive at a conclusion that the CDM is considered for the project.
<b><u>Clarification Request No.6</u></b> To proof additionality it has to be shown whether the existing biogas digesters have been built under different conditions and whether they can be compared with the bio-gas plants realised by the CDM-project.	B.5.16.	Based on baseline survey, the average household cash income of the proposed project households is around RMB 5,015 (about US\$ 660). The average household cash income of RMB 6726 (about US\$885) for those who have already built biogas digesters in the project counties. This reflects the relatively lower income situation of the proposed project households and they have financial gaps for constructing digesters that meet national technical design standard. The incentives from CDM revenue would enable the project households to mobilized required additional funding to invest in biogas digester construction. The relevant description was included in section B5 of PDD. The surveyed data were provided to DOE	<input checked="" type="checkbox"/> The related information was added in the PDD and verified by the validator.
<b><u>Clarification Request No.7</u></b> A document should be provided to DOE to prove that the efficiency of the biogas burner is more than 99.95%	B.2.10. B.6.1.7.	According to AMS 1.C, and AMS III.R, we have deleted all the information related to the "efficiency of the bio-gas burner is more than 99.95%" in revised PDD V5	<input checked="" type="checkbox"/> The related information was deleted from the PDD.
<b><u>Clarification Request No.8</u></b> There is a need to clarify whether Ms Dong Hongmin and Ms Li Yue or their institution are project participants or not.	B.8.1.5.	One sentence is added to clarify that Dr Dong Hongmin and Ms Li Yue are not project participants. Dr. Dong Hongmin and Ms. Li Yue, who are responsible for the application of the baseline study and monitoring methodology, are not project participants.	<input checked="" type="checkbox"/> They were listed as the responsibility for the application of the baseline study and monitoring methodology, not project participants in the PDD.

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


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




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

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Reference No.	Document or Type of Information																				
1.	Project Design Document for CDM project “Hubei Eco-Farming Biogas Project Phase I”, version 05, dated July 27 <sup>th</sup> 2008																				
2.	Approved methodology AMS I.C. (version 12): Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories																				
3.	Approved methodology AMS III.R. (version 01): Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories																				
4.	Appendix B of the simplified modalities and procedures for small-scale CDM project activities (Version 06)																				
5.	Participant list of on-site interview, signed on Nov 22 <sup>nd</sup> , 2007																				
6.	<p>Interview in Enshi Autonomous Prefecture Hubei/P.R. of China conducted from Nov 23<sup>rd</sup> to Nov 24<sup>th</sup>, 2007 by auditing team of TÜV SÜD.</p> <p><b>Interviewed persons:</b></p> <table> <tr> <td>Hongming Dong</td><td>Professor of Chinese Academy of Agricultural Sciences</td></tr> <tr> <td>Yue Li</td><td>Professor of Institute of Environment and Sustainable Development in Agriculture, CAAS</td></tr> <tr> <td>Jin Liu</td><td>Agriculture Specialist of The World Bank Office Beijing</td></tr> <tr> <td>Monali Ranade</td><td>Consultant of The World Bank</td></tr> <tr> <td>Ruili Xie</td><td>General Manager of Hubei Qingjiang Zhongye Co., Ltd</td></tr> <tr> <td>Zhishao Tang</td><td>Ministry of Agriculture of the People's Republic of China</td></tr> <tr> <td>Shuanghe Qin</td><td>Energy Office of Agriculture Bureau of Hubei Province</td></tr> <tr> <td>Xiaoyou He</td><td>Energy Office of Agriculture Bureau of Hubei Province</td></tr> <tr> <td>Changmei He</td><td>Eco-energy Bureau of Enshi City</td></tr> <tr> <td>Shiquan Qi</td><td>Eco-energy Bureau of Enshi Prefecture</td></tr> </table>	Hongming Dong	Professor of Chinese Academy of Agricultural Sciences	Yue Li	Professor of Institute of Environment and Sustainable Development in Agriculture, CAAS	Jin Liu	Agriculture Specialist of The World Bank Office Beijing	Monali Ranade	Consultant of The World Bank	Ruili Xie	General Manager of Hubei Qingjiang Zhongye Co., Ltd	Zhishao Tang	Ministry of Agriculture of the People's Republic of China	Shuanghe Qin	Energy Office of Agriculture Bureau of Hubei Province	Xiaoyou He	Energy Office of Agriculture Bureau of Hubei Province	Changmei He	Eco-energy Bureau of Enshi City	Shiquan Qi	Eco-energy Bureau of Enshi Prefecture
Hongming Dong	Professor of Chinese Academy of Agricultural Sciences																				
Yue Li	Professor of Institute of Environment and Sustainable Development in Agriculture, CAAS																				
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Ruili Xie	General Manager of Hubei Qingjiang Zhongye Co., Ltd																				
Zhishao Tang	Ministry of Agriculture of the People's Republic of China																				
Shuanghe Qin	Energy Office of Agriculture Bureau of Hubei Province																				
Xiaoyou He	Energy Office of Agriculture Bureau of Hubei Province																				
Changmei He	Eco-energy Bureau of Enshi City																				
Shiquan Qi	Eco-energy Bureau of Enshi Prefecture																				

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Reference No.	Document or Type of Information
	Dehua Yang                      Eco-energy Bureau of Enshi Prefecture Huafang Yang                   Eco-energy Bureau of Enshi City Lixin Dai                         Eco-energy Bureau of Enshi Prefecture Xingyu Zhou                    Eco-energy Bureau of Laifeng City Shusheng Chen                 CDM Project Management Office of Enshi Prefecture Xiao Chen                        Foreign Affairs and Overseas Chinese Affairs Office of Enshi Prefecture
7.	Feasibility Study Report issued by Foreign Economic Cooperation Center of Ministry of Agriculture in 2007
8.	Environmental Impact Assessment report issued by China Agriculture University in February, 2007
9.	CDM Project Leaflet issued by Eco-energy Bureau of Xuan'en City on 26/Apr/2007
10.	CDM Project Technical Training Proposal issued by Eco-energy Bureau of Enshi City on 15/Sep/2007
11.	The questionnaires for stakeholders consultant which is performed on 30th March, 2007
12.	CDM Project Trust Deed countersigned by Hubei Qingjiang Zhongye Co.,Ltd and Eco-energy Bureau of Enshi City on 28/Oct/2007
13.	CDM Project Trust Deed for Farmers and project participant list countersigned by Eco-energy Bureau of Xuan'en City and Mayangzhai Village, Gaoluo Township, Xuan'en City on 16/Oct/2007
14.	Carbon Funding Project Digester Construction and Follow-up Management Contract (format)
15.	Farmer Project Financing Capacity Analysis Report of Enshi Prefecture issued by (China Agriculture University Economic Management Institute) CASI in Jun/2007
16.	The Database of Farmer Project Financing Capacity Survey by CASI in Jun/2007

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Reference No.	Document or Type of Information
17.	The Original Database of Baseline survey
18.	The Summary of stakeholder consultant meeting
19.	GB/T 3606-2001 Home Biogas Stove
20.	Test Reports of Home Biogas Stove ( Report No.: Jian 2006-045, Jian 2006-162)
21.	Survey of baseline information on Household Biogas Digesters projects in Enshi Prefecture, Hubei Province and the survey checklist as the original data source.
22.	2006 IPCC Guidelines for National Greenhouse Gas Inventories
23.	Organization Chart of the Project Management Office
24.	Photo of deep pit manure management system and methane burner (oven, lamp and shower)
25.	The approval of Feasibility Study Report published by Enshi Development and Reform Committee on 28/Dec/2007
26.	The approval of Environmental Impact Assessment report by Enshi Environmental Protection Bureau on 24/Jan/2008
27.	Evidence for Efficiency of biogas equipment: Main technical parameter for the biogas oven published by the equipment manufacturer(Beijing Hebaiyi S&T Company) Certificate of Purchase for Biogas Stove published by Enshi Energy Bureau on August 7, 2008
28.	LOA from China DNA dated 21/Jun/2008
29.	LOA from Netherland DNA dated 27/Mar/2008
30.	Statement on the Modalities of Communication with the Executive Board and the UNFCCC Secretariat in 2008

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Reference No.	Document or Type of Information
31.	Emission factor calculation excel spreadsheet
32.	Installed Capacity Calculation excel spreadsheet
33.	Evidence for CDM consideration:  Meeting Minutes on the Development of CDM Household Biogas Digester Project published by Hubei Qingjiang Zhongye Company dated 16/Oct/2006
34.	Letter of the Construction Status of Biogas Digester in the Rural Area of Hubei Province published by Hubei Province Rural Energy Office on 28/Dec/2007
35.	Comparison of the biogas digester installation cost of year 2003 and that of year 2007 published by Hubei Province Rural Energy Office in March , 2008
36.	Source of The parameter for NCV , Carbon EF for raw coal and Fraction Oxidized for Raw coal published by China DNA at 9/Aug/2007: <a href="http://www.ccchina.gov.cn">www.ccchina.gov.cn</a>
37.	Evidence for Project Start:  Construction Contract of CDM project of Zhongying Countryship of Hefeng County dated 1/Apr/2007 Notice on Start Up of CDM at Eco-Farming Project issued by Enshi Prefecture Eco-Energy Bureau on 25/Mar/2007