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Validation Report

VALIDATION OF THE CDM-PoA:
HENAN PROVINCE ZHOUKOU CITY RURAL HOUSEHOLD
BIOGAS DEVELOPMENT PROGRAMME (2007-2010)

REPORT NO. 600500432

29 December 2012

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Subject: Validation of the CDM PoA “Henan Province Zhoukou City Rural Household Biogas Development Programme (2007-2010)”

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Other Participants (Client):

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Project Site(s):

Zhoukou City, Henan Province, P.R.China
Latitude: 33°N to 34°N and Longitude: 114°E to 115°E

Applied Methodology / Version:	AMS.I.C / Version 19 AMS.I.I/ Version 03*	Scope(s): 1 Technical Area(s): 1.1
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First PoA-DD Version (GSP):	Final PoA-DD version:
Date of issuance: 28-08-2009	Date of issuance: 28-12-2012
Version No.: 01	Version No.: 09
First CPA-DD generic version:	Final CPA-DD generic version:

* This methodology is only used for the monitoring part with regards of clarification no. 571

<p>Date of issuance: 28-08-2009</p> <p>Version No.: 01</p> <p>First CPA-DD real case version:</p> <p>Date of issuance: 28-08-2009</p> <p>Version No.: 01</p> <p>Starting Date of GSP 30-12-2009</p>	<p>Date of issuance: 28-12-2012</p> <p>Version No.: 09</p> <p>Final CPA-DD real case version:</p> <p>Date of issuance: 28-12-2012</p> <p>Version No.: 09</p>
<p>Assessment Team Leader:</p> <p>Nikunj Agarwal</p> <p>Assessment Team Members:</p> <p>Xiaoying Chen, Simon Shen*, Supratik Dutta</p> <p>Technical Expert:</p> <p>Ajit Habbu (TA.1.1.)</p>	<p>Technical Reviewer:</p> <p>Thomas Kleiser</p>
<p>Summary of the PoA Validation Opinion:</p> <p><input checked="" type="checkbox"/> The review of the project design documentation and the subsequent follow-up interviews have provided TÜV SÜD with sufficient evidence for the determination of the PoA's fulfilment of all stated criteria. In our opinion, the PoA meets all relevant UNFCCC requirements for the CDM. Therefore, TÜV SÜD recommends the PoA for registration by the CDM Executive Board if the 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.</p> <p><input type="checkbox"/> The review of the project design documentation and the subsequent follow-up interviews have not provided TÜV SÜD with sufficient evidence for the determination of the PoA's fulfilment of all stated criteria. Therefore, TÜV SÜD will not recommend the PoA for registration by the CDM Executive Board and will inform the project participants and the CDM Executive Board of this decision.</p>	

* Left the Organization

ABBREVIATIONS

AMS	Approved Methodology Small scale
CME	Coordinating and Managing Entity
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CER	Certified Emission Reduction
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
CPA	CDM Programme activity
CPA-DD	CDM Programme Activity Design Document
CR / CL	Clarification Request
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission Reduction
FAR	Forward Action Request
GHG	GreenHouse Gas(es)
IPCC	Intergovernmental Panel on Climate Change
IRL	Information Reference List
KP	Kyoto Protocol
LPG	Liquid Petroleum Gas
PDD	Project Design Document
PoA	Programme of Activities
PoA-DD	Programme of activities design document
PP	Project Participant
TÜV SÜD	TÜV SÜD South Asia Pvt Ltd
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual (Version. 01.2)

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1 INTRODUCTION

1.1 Objective

The objective of the validation process is to provide an independent assessment by a third party, a Designated Operational Entity (DOE), of the proposed Programme of Activities (PoA) and the CDM Programme Activity (CPA) template with generic information applicable to all CPAs under that PoA and the associated real case CPA-DD.

The assessment involves the evaluation of the PoA basis and design identified in the PoA Design Document (PoA-DD), template CPA design document (CPA-DD) and the associated real case CPA-DD using the defined criteria outlined by the registration under the Clean Development Mechanism (CDM). Validation is part of the CDM project cycle and results in a conclusion by the executing DOE on whether or not a PoA is valid to be submitted for registration to the CDM Executive Board (CDM-EB). The ultimate decision on the registration of a proposed PoA rests with the CDM-EB and the Parties involved.

The PoA addressed in this validation report has been submitted under the following title:

Henan Province Zhoukou City Rural Household Biogas Development Programme (2007-2010)

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 PoA, the scope is set by:

- The Kyoto Protocol, in particular § 12 and modalities and procedures for the CDM
- Decision 2/CMP1 and Decision 3/CMP.1 (Marrakech Accords)
- Further COP/MOP decisions with reference to the CDM (e.g. decisions 4 – 8/CMP.1)
- Decisions and specific guidance outlined by the EB which are published under <http://cdm.unfccc.int>
- Guidelines for Completing the PoA Design Document (PoA-PDD), CDM programme of activities template and design document (CPA-DD) and the applied CDM methodology including the sections especially dedicated to PoA
- Management systems and auditing methods
- Environmental issues relevant to the applicable sectoral scope
- Applicable environmental and social impacts and aspects of CDM project activity
- Sector specific technologies and their applications
- Current technical and operational knowledge of the specific sectoral scope and information on best practice

The validation process is not meant to provide any form of consulting for the PoA Managing Entity, CPA Implementer(s) and/or project participant(s) (PP). However, stated requests for clarifications, corrective actions, and/or forward actions may provide input for improvement of the project design.

Once TÜV SÜD receives the PoA-DD and supporting CPA template and completed CPA-DD of the real case, it is made publicly available on the UNFCCC website and on TÜV SÜD's website, which initiates a 30 day global stakeholder consultation process (GSP). In special circumstances, such as

when a PoA design changes, the GSP may need to be repeated. Information on the PoA-DD is presented on page 1 of this report.

The purpose of validation is to demonstrate compliance or non-compliance of the PoA with all stated and valid UNFCCC and host party requirements. Additionally, the purpose of validation is to enable the registration of PoA, which is only a part of the total CDM project cycle. Therefore, TÜV SÜD cannot be held liable by any party for decisions made, or not made, based on the validation opinion that go beyond this purpose.

2 VALIDATION METHODOLOGY

The PoA assessment is based on the “Clean Development Mechanism Validation and Verification Manual (version.1.2)” and is conducted using standard auditing techniques to assess the correctness of the information provided by the project participants. Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the CDM PoA are appointed. Once the project made available for the stakeholder consultation process, members of the team carry out the desk review, follow-up actions, resolution of issues identified, and the preparation of the validation report. The prepared validation report and other supporting documents then undergo an internal quality control by the CB “Environment and Energy” before being submitted to the CDM-EB.

In order to ensure transparency, assumptions must be clear and stated explicitly and background material must also be referenced. TÜV SÜD has developed a methodology-specific protocol customized for the PoA. The protocol demonstrates, in a transparent manner, the PoA criteria (requirements), discussion on each criterion by the assessment team, and the results from validating the identified criteria.

The validation protocol serves the following purposes:

- To organize the details and provision of clarifications on the requirements of which a CDM-PoA and its CPA-DD are expected to meet
- To elucidate how a particular requirement has been validated as well as to document the results of the validation and any adjustments made to the PoA-DD.

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

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

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

In case it is found that the project activity does not meet CDM requirements, more detailed information on this decision is presented in Table 3.

Validation Protocol Table 3: Unresolved Corrective Action and Clarification Requests		
Clarifications and corrective action requests	Id. of CAR/CR	Explanation of the Conclusion for Denial
<i>Referenced request if final conclusions from table 2 resulted in a denial.</i>	<i>Identifier of the Request.</i>	<i>Detailed explanation of why the PoA is considered non-compliant with a criterion and a clear reference to the criterion</i>

The completed validation protocol is enclosed in Annex 1.

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 "Environment and Energy".

The composition of an assessment team has to be approved by the Certification Body (CB) to assure that the required skills are covered by the team. The CB TÜV SÜD operates four qualification levels for team members that are assigned by formal appointment rules:

- Assessment Team Leader (ATL)
- Validator (V)
- Validator Trainee (T)
- Technical Experts (TE)

It is required that the sectoral scope(s) and the technical area(s) linked to the methodology and project have to be covered by the assessment team.

Assessment team:

Name	Qualification	Coverage of sectoral scope	Coverage of technical area	Coverage of financial aspect	Host country experience
Nikunj Agarwal	ATL	☑	☑	---	---
Xiaoying Chen	V	☑	---	---	☑
Simon Shen*	T	---	---	---	☑
Supratik Dutta	V	☑	---	---	---
Ajit Habbu	TE	☑	☑	---	---

Technical Reviewers:

- Thomas Kleiser

2.2 Review of Documents

The PoA-DD and completed CPA-DD for the GSP was submitted to the DOE in December 2009. The PoA-DD and additional background documents related to the PoA design and baseline have been reviewed to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources has been done as an initial step of the validation process. A complete list of all documents and evidence material reviewed is attached as Annex 2 to this report.

2.3 Follow-up Interviews

During the period 6th – 9th June 2010, TÜV SÜD performed interviews and physical site inspections with project stakeholders to confirm relevant information, and to resolve issues identified in the document review. The following table provides a list of all key persons interviewed in this process on-site.

Name	Organisation
Zheng Punchang	Zhoukou New Energy Development Co., Ltd.
Bai Juchuan	Zhoukou New Energy Development Co., Ltd.
Deng Decai	Zhoukou New Energy Development Co., Ltd.
Song Zhijian	Zhoukou New Energy Development Co., Ltd.
Julia Elmgren	Gazprom Marketing & Trading Limited

2.4 Cross-check

During the validation process the team has made reference to available information related to similar projects or technologies as the CDM PoA. Project documentation has also been reviewed against the approved methodology applied to confirm the appropriateness of formulae and correctness of calculations.

* Left the Organization and covered TA during site audit

2.5 Resolution of Clarification and Corrective Action Requests

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

The final PoA-DD version-09 that was submitted in December 2012 serves as the basis for the final assessment presented herewith. Additional changes to the project during the validation process are not considered to be significant with respect to the main CDM objectives. The two CDM main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

2.6 Internal Quality Control

Internal quality control is the final step of the validation process and is conducted by the CB "Environment and Energy" which checks the final documentation, which includes the final validation report and all necessary documents. The completion of the quality control indicates that each submitted report has been approved by the CB Committee. In projects where one of the CB Committee members is part of the assessment team, the approval is given by the rest of the committee.

After confirmation by the Managing Entity and/ or CPA Implementer(s) and/ or PP, the validation opinion and relevant documents are submitted to the EB through the UNFCCC web-platform.

3 SUMMARY

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

3.1 Approval

The project participant and managing entity of the PoA is Zhoukou New Energy Development Co., Ltd. from China, which is the implementing agency in the host country China. The involved party meet the requirements to participate in the CDM.

The Chinese DNA has issued a letter of approval (LoA) dated July 2010 authorizing Zhoukou New Energy Development Co., Ltd. as a project participants and coordinating and managing entity [IRL# 9].

The United Kingdom (UK) DNA has also issued a LoA, dated 26.04.2012, authorizing Gazprom Marketing & Trading Limited. as a project participant [IRL# 8]. TÜV SÜD received the letters from the project participant directly and considers the provided letter as authentic.

Furthermore, after checking the provided LoAs, TÜV SÜD confirms that the letters refers to the precise proposed PoA title in line with the title in the PoA-DD: Henan Province Zhoukou City Rural Household Biogas Development Programme (2007-2010).

The letters also indicates that the participating Party is a Party to the Kyoto Protocol, and that the participation in the PoA is voluntary. The Chinese LoA also confirms that the proposed CDM programme of activity contributes to the sustainable development of People's Republic of China(host country). Based on the information given in the letter, TÜV SÜD considers the approval as unconditional with respect to these items.

The LoAs have been issued by the respective Party's DNA – National Development and Reform Commission of the People's Republic of China and The Environment Agency, United Kingdom.

The LoA's does not refer to a specific version of the PDD or validation report.

3.2 Participation

The participant of the project activity has been approved by the corresponding Party, which is confirmed by the issued LoA.

The means of validation used are similar to the ones described in Section 3.1, specifically in regard to the approval process of the project activity.

3.3 Programme of Activities Design Documents

The PoA-DD and the CPA-DD template are in compliance with relevant form and guidance as provided by UNFCCC. The most recent version of the forms is used.

TÜV SÜD considers that the guidelines for the completion of the PoA documents in their most recent version have been followed. Relevant information was provided by the Managing entity and/ or project participants in the applicable PoA sections. Completeness was assessed through the protocol included in Annex 1.

3.4 Programme Description

The following description of the programme as per PoA-DD was verified:

The PoA involves displacement of the traditional fossil fuels (LPG and Coal) stoves with biodigester based cooking stoves in the entire Zhoukou City of Henan Province. Household organic waste material like human and animal manure, crop waste etc. are going to bio digester. The biogas is generating in the digester through digestion of these organic waste materials. Zhoukou New Energy Development Co., Ltd. will be the coordinating and managing entity of the biodigester based cooking stoves in Zhokou city and also the sole implementing agency to distribute the stoves in the host country. The CDM programme activities (CPAs) under the PoA will be implemented in the Zhoukou City of Henan Province. There are no mandatory policies or regulations for the replacement of fossil Fuel stoves with biogas digester and according to the submitted confirmation letter from the Agriculture Bureau of Zhoukou City, Henan province. The proposed PoA is a voluntary action by the coordinating/managing entity – Zhoukou New Energy Development Co., Ltd. [IRL# 6, 23, 31].

Under the PoA, traditional fossil fuels (LPG and Coal) stoves which are commonly used in the rural area families of Zhoukou city would be replaced by SSC-CPA implementer(s) with biodigester based cooking stoves. Biogas is a byproduct of the decomposition of organic matter by anaerobic bacteria. Organic waste will be kept into a sealed tank called a digester where it will be heated and agitated. In the absence of oxygen anaerobic bacteria consume the organic matter to multiply and produce biogas which will be consumed by household in stove for cooking. The construction of the biogas digester will be based on the technical standard established by the Chinese government. The biogas stoves will be supplied by the domestic manufacturer. It has also been checked by the DOE that no Annex-I technology has been transferred in the programme. The household required to be signed construction acceptance certificate after completing the construction of the biogas digester [IRL# 23,25, 26, 29, 32, 41, 50].

The PoA is funded entirely by Zhoukou New Energy Development Co., Ltd. and does not form a part of any government-funded or supported programme in Zhokou City. It has been verified that there is no diversion of ODA involved [IRL# 32, 44]. The programme had taken CDM into consideration in 26th October 2006 which has been confirmed by Board minutes of the Zhoukou New Energy Development Co., Ltd. Further, though project participant had taken CDM consideration in the board meeting but according to the para 3 of Annex 26, EB 60, CDM consideration is not required for PoA project [IRL# 34]. The starting date of the PoA is 1st July 2007 based on the construction date of the first biogas digester [IRL# 40]. The length of the PoA is taken 28 years [IRL# 2,3].

A clear and transparent description of the operational and management arrangement has been established by Zhoukou New Energy Development Co., Ltd. and stated in the PoA-DD. This has been verified during site audit and review of the operation and maintenance procedure submitted by Zhoukou New Energy Development Co., Ltd [IRL# 7]. The operational and management arrangements which have been established by the coordinating/managing entity are suitable for the PoA validation and arrangements are sufficient to ensure that the coordinating/managing entity have control of all records and information related to the implementation of individual CPAs and also in a position to ensure each CPA is being operated in accordance with the specific requirements of the programme.

As the fossil fuel stoves would be replaced with biogas digester based stoves and the replacement would reduce the GHG emissions (CO₂) from reducing the amount of coal and LPG fuel in cooking stoves.

The information presented in the PoA documents on the technical design is consistent with the actual planning and implementation of the project activity confirmed in the following ways:

- A review of data and information (see annex 2);

- An on-site visit to the place where the associated real case CPA is being implemented and interview with relevant stakeholder and personnel with knowledge of the project in attendance; and
- A review of information related to similar projects or technologies which have been used to validate the accuracy and completeness of the project description.

In conclusion, TÜV SÜD confirms that the PoA project description, as included in the PoA-DD, is sufficiently accurate and complete in order to comply with the with relevant forms and guidance as per paragraph 58-64 of VVM.

3.5 Eligibility Criteria for CPA Inclusion

The managing entity has criteria for the inclusion of the CPA as per “Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for PoA” (Ver. 01.0), the eligibility criteria for inclusion of a CPA in the PoA are follows: The eligibility criteria’s have been stated are verifiable with regards to the applicability of the applied methodology. The following documents have been assessed to check the eligibility criteria for CPA inclusion.

- All the biogas digesters and their auxiliary equipment including the collection equipment and the biodigester based cooking stoves under the proposed CPA will be located in the boundary (geographic coordinates are 114 °E to 115 °E and 33N° to 34°N) of the Programme, i.e. within Zhoukou City. It can be checked with unique identification of the CPA location and GPS coordinates of the CPA-DD during CPA inclusion time.).
- Avoidance of double counting can be checked by database of household biogas digesters [IRL# 68] which included unique ID number of the digester/household, which includes CPA number, household's unique ID, user name, address and location, commissioning date, size of the biogas digester information.
- The size of digesters i.e. 8m³, 10m³, 12m³ and 15m³ involved in the program can be checked with project construction acceptance certificate[IRL# 36, 41]. Further, biogas digester will be designed and constructed by a qualified construction team belonging to Zhoukou New Energy Development Co., Ltd and it should be built as per national quality standard China national standard for biogas construction: GB/T 4750-2002 ; GB/T 4751-2002;GB/T 4752 2002 [IRL# 26]
- As starting date of the PoA is 01/07/2007 which has been confirmed by biogas acceptance certification [IRL# 41] therefore starting date of each CPA will be 01/07/2007 or after that. The starting date of the CPA can be checked with CER transfer contract [IRL# 35], project acceptance certificate [IRL# 36, 41] and original CPA list [IRL# 43]. It can also be cross checked with CPA list submitted to UNFCCC before 31/01/2010 [IRL# 69]
- Compliance with the applicability criteria point 1, 4, 8, 9 and 13 methodology with respect to baseline and monitoring for AMS I.C. Ver.19 and monitoring part i.e. paragraph 16, 17 and 18 of the methodology of AMS-I.I. Ver. 3.0– “**Biogas/biomass thermal applications for households/small users**” will be applied for the monitoring procedure in the Programme (which is in line with clarification request 571*) [IRL# 3,4]

* Paragraph 30 of the meeting report: http://cdm.unfccc.int/Panels/ssc_wg/meetings/034/ssc_034_report.pdf

- As per para 2 (c) of the “Guidelines of the demonstration of additionality of small-scale project activities”, documentation of barriers is not required for the positive list of technologies and project types that are defined as automatically additional if below criteria’s are fulfilling by each CPA
 - a) The CPA is composed of isolated biogas digesters;
 - b) The amount of isolated biogas digesters is less than 13,800;
 - c) The isolated biogas digesters generate gas to be used by households;
 - d) The intalled capacity of each biogas stove is less than 750kW.

The above criterias can be confirmed with database of household biogas digesters [IRL# 68], emission reduction Calculation and biogas Stove Specification [IRL# 25]. Also, refer the section 3.9.3 of the report on how above condition will be checked during CPA inclusion time.

- Local stakeholder consultations and environmental impact analysis has been undertaken at the PoA level and it has been checked with notification of the stakeholder meeting [IRL# 5], CDM questionnaires for stake holder meeting [IRL# 6], EIA assessment report [IRL# 27] and Zhoukou City Environmental Protection Bureau approval on the EIA report [IRL# 28]. As stakeholder consultation has been considered at PoA level therefore this criteria will not be checked during CPA inclusion time.
- No public funding from Annex I parties involved in the progarmme. It can be checked with feasibility study report [IRL# 23] and self declaration letter of the project proponent on no ODA funding for PoA Programme and each CPA [IRL# 32, 44]
- Target group of the programme is biogas digester uses in the rural households for cooking purpose within Zhoukou City and it can be checked with biogas digester construction Acceptance Certification and database of the biogas digesters [IRL# 36, 68]
- Sampling plan will be applied to monitor the parameter data $n_{k,y}$ and same will be chosen as per the relevant requirements for sampling as per “Standard for sampling and surveys for CDM Project activities and programme of activities Ver. 03.0” by using 90% confidence interval and a 10% margin of error and inspection will be done annually for the sampling parameter. Simple random sampling approach has been adopted to calculate the sample size. Further, according to the clarification request no. 571 (http://cdm.unfccc.int/Panels/ssc_wg/meetings/034/ssc_034_report.pdf), at least five campaigns per digester size need to be implemented in each year to monitor the quantity of generated biogas for one typical biogas unit of the size k. It will be checked from the biogas digester database and information available on the CPA sampling in sampling calculation spread sheet and CPA-DD which will be submitted to the DOE during the CPA inclusion time.
- Thermal generation capacity should not exceed $45MW_{th}$. Each rated capacity of the biogas stove is 3.26 KW and total biogas stoves numbers under proposed CPA should not exceed 13,800. It can be confirmed with technical specification of the stove [IRL# 25] Database of household biogas digesters [IRL# 68].

Debundling check will be performed as per “Guidelines on Assessment of De-bundling for SSC Project Activities (Ver. 03.0)”. According to para 7 of the guideline, If each of the independent subsystems/measures (e.g., biogas digesters, residential solar energy systems, kerosene or incandescent lighting replacements) included in one or more CDM project activities is no greater than 1% of the small scale thresholds defined by the applied methodology and the subsystems/measures are indicated in the PDDs to be each implemented at or in multiple locations (e.g., installed at or in multiple homes) then these CDM

project activities are exempted from performing a de-bundling check, i.e., considered as being not a de-bundled component of a large scale activity. In the programme, each rated capacity of the biogas stove is 3.26 KW, which is less 1% of the small scale thresholds. The CPA of PoA can be exempted from performing de-bundling check. However, it can be confirmed through biogas stove specification and information provided in the CPA-DD [IRL# 25]

These eligibility criteria's can be checked at the CPA level by the managing entity and can be confirmed by the DOE during inclusion. Also, as per para 167 of VVM (version.1.2), the eligibility criteria are sufficient to ensure the CPAs will comply with CDM requirements applicable to the PoA.

3.6 Operational and Management Plan

The monitoring plan presented in the PoA-DD complies with the requirements of the paragraphs 17 of Annex 5, EB70. A clear and transparent description of the operational and management arrangement has been established by CME which stated in section A.4.4 and E.7.2 of the PoA-DD. The CME will coordinate and manage biogas service station and centre of the each CPA and assist them in implementing each element of the monitoring plan.

The following criteria as per EB 70 Annex 5 requirements have been checked by the audit team.

a) A clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies;

The CME (Zhoukou New Energy Development Co., Ltd) will be responsible for operational and management plan of the proposed PoA. At PoA level, CME has formed two departments (1) The technological department which will be responsible for the design and construction of biogas digesters, training of biogas service centre personal, managing the biogas service stations and (2) Statistical department which will be responsible for managing the project capital and all records and files related to the programme. In CPA level, biogas service centre will be setup and same will be managed by a manager of the biogas station. Biogas service centre will work under biogas service centre. Section A.4.4.1. of the PoA-DD summarizes the responsibilities of CME including technological and statistical department and biogas service station manager of the each CPA. The roles and responsibilities of personnel involved in the process of inclusion of CPAs were also assessed by the audit team based on the Operation & Maintenance manual for the programme submitted by the PP [IRL # 9]. The description in the PoA-DD and submitted supporting documentation demonstrates the involvement of experienced and competent personnel in the PoA.

b) Records of arrangements for training and capacity development for personnel

The technological department is responsible for training records and arrangements for training and capacity development for personnel involved in the programme. This training will be provided as per Operation & Maintenance manual for the programme submitted by the PP [IRL # 7]. Statistical department is responsible for managing and controlling the all users' files and management scheme, construction and maintenance scheme of biogas digesters, financing and capital management scheme.

Besides, sections A.4.2. and A.4.4.1. of the PoA-DD inform about training on biogas digester installation. The DOE verified these aforementioned documents and the PoA-DD and concludes that appropriate measures will be undertaken to ensure that personnel involved in monitoring or any other activities related to the PoA are sufficiently trained.

c) Procedures for technical review of inclusion of CPAs;

Biogas service centre is responsible to collect the installation of the biogas digester which will be included the information of name, address and the ID number of users, the type, unique registered number and the date for construction or replacement of biogas units. All information will be checked

by CME before including CPA in the programme. CME will also ensure all CPA inclusion criteria as mentioned section A.4.2.2 of PoA-DD shall be fulfilled. This review will be undertaken in accordance with the monitoring procedure, eligibility criteria outlined in this POA-DD, and the applicability criteria of the applied methodology. The procedures are clearly outlined in the Operation & Management plan which is checked by the audit team [IRL # 9].

- 1) Each biogas digester will be identified by a unique ID number to avoid the double counting. (e.g. to avoid the case of including a new CPA that has already been registered either as a CDM project activity or as a CPA of another PoA); the managing entity will check the CDM project database, as well as in any other voluntary carbon scheme (such as Gold Standard, VCS, VER+[†]) to confirm whether CPA is registered or not in any CDM or carbon scheme project.
- 2) The coordinating managing entity will ensure that each SSC-CPA will maintain appropriate records and document and a detailed procedure has now been given in section A.4.4.1 of the PoA-DD.
- 3) CME will take necessary steps for improving of the PoA management system.
- 4) In order to ensure that all included SSC-CPAs are not de-bundled components of another CDM project or CPA, the coordinating entity will follow the procedures stated under "Guidance for determining the occurrence of de-bundling under a Programme of Activities (PoA)" of the "Guidelines on Assessment of Debundling for SSC Project Activities", Version 3.

Above operation and management procedure has been verified by DOE with Operation & Management plan which is checked by the audit team [IRL # 9].

Provisions are in place to ensure that those operating the CPA are aware of and have agreed that their activity is being subscribed to the PoA. The Implementation agreement of Henan Province Zhoukou City Household Biogas PCDM Project (also known as CER transfer contract) [IRL# 35] between CME and stove user which will ensure that legal agreements have been put in place between two parties and make sure that those operating the CPAs is aware and have agreed that their activity is subscribed to the PoA;.

The procedures for technical review of inclusion of CPAs are deemed to be appropriate in the opinion of the DOE.

d) A procedure to avoid double counting (e.g. to avoid the case of including a new CPA that has already been registered either as a CDM project activity or as a CPA of another PoA);

The system to avoid double counting has been indicated in section A.4.4.1 of the PoA-DD. Double-counting of emissions reductions will be avoided by the unique ID number of stoves included in each CPA. Also, double counting can be checked geographical location/ Name or Identity number of the house or a person. The audit team has also checked few sample households based on this identification. Also, as each CPA will have a unique number in host country, thus it can be checked whether a CPA under the PoA already is a registered CDM project or CPA in another PoA from the UNFCCC website and any other voluntary carbon scheme (Gold standard, VCS, VER+).

The DOE due to its local and sectoral expertise confirms that the procedures to avoid double counting are appropriate.

* cdm.unfccc.int/Projects/projsearch.html, <http://www.vcsprojectdatabase.org>, <http://www.cdmgoldstandard.org/our-projects/project-pipeline>

[†] VER+ is TÜV SÜD's standard for verified emission reductions.

e) Records and documentation control process for each CPA under the PoA

There will be a record keeping system for each CPA under the PoA has been indicated in section A.4.4.1 of the PoA-DD and same will be developed as per the monitoring plan of the programme. CME will take necessary steps to ensure that each CPA shall maintain the proper record and documents according to the procedure of the record keeping system. This has been checked by DOE with Operation & Management plan for the programme submitted by the PP [IRL # 9].

The procedures for records and documentation control process for each CPA under the PoA are deemed to be appropriate in the opinion of the DOE.

f) Measures for continuous improvements of the PoA management system

CME will review of the PoA management system and outside problem such as stove distribution/Installation, maintenance, monitoring and other problems will occur during operation of the programme. This review will be conducted at the verification. This has been checked by DOE with Operation & Management plan for the programme submitted by the PP [IRL # 9] and interviews with the CME during the DOE on-site visit..

Hence it could be confirmed that the CME has the capacity and competency to implement the Operation and management plan of the PoA and this is in line with the requirements of EB 70 Annex 5 guidelines.

3.7 Monitoring Plan

The CME ensures that statistically sound sampling methods will be used to be in line with Annex 4 of EB69 "Standard for sampling and surveys for CDM project activities and programme of activities", version 03.0 and with Annex 5 of EB69 "Guidelines for sampling and surveys for CDM project activities and programme of activities", version 02.0 and the applied methodology. The monitoring procedures to be used for verification of ERs achieved by the CPAs under this SSC-PoA are outlined in detail in Section 3.11 of this report.

Sampling plan will be applied to monitor the parameter data $n_{k,y}$ in each CPA and same will be chosen as per the relevant requirements for sampling as per "Standard for sampling and surveys for CDM Project activities and programme of activities Ver. 03.0" and Annex-5 of EB 69 "Guidelines for sampling and surveys for CDM project activities and programme of activities" and applied methodology. The survey will be done on registered biogas units of the size k commissioned in each CPA.

Project proponent has defined the sampling plan procedure according to the requirement of the "III. Recommended outline for a sampling plan" of Annex-5 of EB 69. Audit team has been reviewed sampling plan procedure of the programme given in section E.7.2 and A.4.4.2. of the PoA-DD as per following:

Objectives and reliability requirements:

A 90/10 confidence/precision for annual sampling across CPAs has to be met.

This confidence/precision levels comply the monitoring requirements of the para 17 of AMS I.I version 3.

Target Population:

The target population is all rural households in the Zhoukou City which are using biogas units under this programme. It has been verified by DOE with the database of the biogas digester [IRL # 68] submitted to DOE and physical survey done by DOE during site audit.

Sampling method:

In sampling method, project proponent has chosen simple random sampling according to the para 8 of Annex-05 of the EB 69 and this approach can be accepted as per the nature and scenario of the programme where each biogas unit and associated equipment in a CPA is equally likely to be operational because the equipment is built and installed to the same specification and located in rural areas of Zhoukou city. Biogas units involved in the programme will be inspected annually or by the staff of the biogas service center. DOE has checked the same with operational manual [IRL # 7] and accepted.

Sampling Frame:

The target population is all rural households in the Zhoukou City which are using same size biogas units. The type and nature of the biogas units and its associated equipment are same. Therefore simple random sampling approach has been chosen by the project proponent and sampling frame would be formed in each CPA on the size (k) of each biogas unit installed under this programme. Type and nature of the biogas units have been verified by DOE with the database of the biogas digester [IRL # 68] submitted to DOE and physical survey done by DOE during site audit.

Sample size:

As described above that project has chosen simple random sampling and accordingly sample size will be calculated as per equation of para 50 of the "Guidelines for sampling and surveys for CDM project activities and programme of activities" (Version 2.0).

The equation of the sample size calculation is

$$n \cong Z^2 * N * p(1-p) / ((N-1) * 0.1^2 * p^2 + Z^2 * p(1-p))$$

Parameter	Source or Value	Auditor conclusion
n (Sample size)	Value will be calculated at CPA level based on the above calculation and biogas units involved in each CPA.	Sample size would be calculated as per above calculation in each CPA level
N (Total number of units in the population)	Total rural household numbers involved in the CPA	Householder numbers can be checked with database of the biogas digester [IRL # 68] of the CPA.
P (expected proportion)	50%	According to the local government instruction given in biogas service centre poster [IRL# 71] of the host country, utilization rate of the biogas unit shall not be lower than 95%. But since p is unknown therefore as per conservative approach 50% will be considered

		<p>in the sample size calculation as 50% gives the largest sample size and this approach is standard practice [IRL# 72] when the p is unknown.</p> <p>As nature of the programme is homogeneous therefore value 50% can be accepted as same is in line with para 50 of the "Guidelines for sampling and surveys for CDM project activities and programme of activities" (Version 2.0)</p>
Z (confidence level)	1.654 (i.e. 90% confidence)	<p>Operation of biogas units will be inspected annually. and 90% confidence interval and a 10% margin of error would be taken for the sampling parameter.</p> <p>Also, project proponent has opted for annual sampling and the confidence interval considered is 90/10 according to the monitoring requirements of the para 17 of AMS I.I version 3.</p>
Required precision	0.1	<p>Value is in line with the "Guidelines for sampling and surveys for CDM project activities and programme of activities" (Version 2.0)</p>

Also, sample size number would be minimum 30 according to the EB 69 Annex 4 paragraph 12.

From above, DOE has confirmed that the proposed sample size calculation approach has been adequately described to achieve the sample size.

Further, project proponent will ensure that if the estimates from the actual samples fail to achieve the target minimum levels of precision, then additional data collection or new sample shall be performed to reach the required precision level according to the requirement of the para 16 of Annex 4 of EB 69.

Data to be collected:

Field Measurement:

Field collected data will be maintained at CPA and POA level. In CPA level, data will be collected by the staff of the biogas centres. Biogas units will be inspected by staff in annual basis. Data will be collected in the form and information will be collected at the information on the size of the biogas digester, country, town, the village of the household, register number of the household and the ID

number of the householder. The collected data will be stored to database and will maintain all these records by biogas service centre.

The statistical department is responsible to summarize the statistic result submitted by biogas service station at POA level. This has been checked by DOE with operation manual [IRL # 7] of the programme and accepted.

QC/QA:

Training procedure of field personal has been elaborated under “QA/QC” of the PoA-DD. Training will be done at biogas service centre where technical expert of the technological department of the project proponent. In the training, field personal will get training on maintenance and operation of the different equipment of the biogas digester and stove. Including this, the training will provide on how personal will collect and store the database information. Training procedure of the programme can be accepted as same is in line with the requirement of the para 34 of “Guidelines for sampling and surveys for CDM project activities and programme of activities” (Version.02).

Further, PP will ensure that qualified staff member will inspect and collect the household data and proper maintenance will be done for all biogas units involved in the programme. Also, ensure that non responses biogas units shall be recorded appropriately and accordingly update the database of the digester.

Above procedure has been checked by DOE with operation manual [IRL # 7] of the programme and accepted.

Also, DOE will reproduce the sample calculation size from numbers of the households in each CPA to verify the sample size during verification.

Analysis:

As described under above field measurement, field data will be collected by staff of the biogas service centre and will be stored in biogas service centre of the CPA and statistical department is responsible to summarize the statistic result submitted by bios service station at POA level. CME will ensure that data will be appropriately maintained at CPA and POA level. CME is also responsible to calculate the emission reduction and sample size of the each CPA, as well as also ensure that required precision and confidence shall be achieved from the selected sample. If selected sample is not enough for required precision and confidence level then additional records will be sampled.

Implementation:

CME will hire and provide the training to the staff of the biogas service centre in each CPA. Qualification, training procedure of the staff will be as described in the above “QA/QC”. CME will also maintain the operation and non operation stove number records. Implementation procedure of the programme has been checked by DOE with operation manual [IRL # 7] of the programme and and physical survey done by DOE during site audit.

The DOE by assessing EB69, Annex 04 and Annex 05 (Standard and Guidelines for sampling and surveys for CDM project activities and programme of activities) confirms that the sampling plan is appropriate and plausible and is following the applicable requirements. The DOE used amongst others the recommended evaluation criteria indicated in section V of EB69, Annex 05 for the validation of the sampling plan. The DOE confirms that the evaluation criteria as per Section V of EB69, Annex 5 can be satisfactorily responded when assessing the sampling plan.

Sampling objective, sampling size, sampling target, sampling frame, sampling method, field measurements, QA/QC procedures and implementation plan are deemed to be appropriate and plausible according to the sectoral expertise of the DOE and have been further confirmed and substantiated in on-site interviews with the CME.

The monitoring plan also provides a transparent system to ensure that no double accounting occurs and that the status of verification can be determined CPA inclusion time. The system to avoid double counting has been indicated in the PoA-DD. This would be done by Zhoukou New Energy Development Co., Ltd. through review of information provided by SSC-CPA with information available with UNFCCC. Also, as each CPA will have an unique ID, unique household number, name etc. thus it can be checked whether a CPA under the PoA already is a registered CDM project or CPA in another PoA.

The description provided in the PoA-DD on the operational and management arrangements were confirmed based on document review and on-site interviews.

Project Emission:

If any physical leakage in the biogas digester system then the same will be considered under project emission. Project emission will be calculated as per equation 5 of the PoA-DD. It is consistent with the approach of paragraph 13 of methodology AMS-I.C. Ver. 19.0 and paragraph AMS-III.D (version 18). Physical leakage 10% is more conservative as compared to the 0.05 m³ biogas leaked/m³ biogas produced given in paragraph 13 (b) of AMS-III.D (version 18).

Leakage Monitoring:

According to the methodology, leakage emissions do not have to be considered in the project activity since the used technology equipment is not being transferred from another activity.

3.8 Baseline and Monitoring Methodology

3.8.1 Applicability of the selected methodology

Compliance with each applicability condition as listed in the chosen baseline and monitoring methodology AMS-I.C Version 19 has been demonstrated below:

Applicability Criteria	Project Case (as per PoA-DD)	Auditor's Conclusion
This category comprises renewable energy technologies that supply users with thermal energy that displaces fossil fuel use. These units include technologies such as solar thermal water heaters and dryers, solar cookers, energy derived from renewable biomass and other technologies that provide thermal energy that displaces fossil fuel.	As described in section A.4.2.1, the CDM Project Activities covered under this PoA employed renewable Energy technology i.e. household biogas to generate thermal Energy for cooking by users. In the absence of the household biogas technology, fossil fuel stoves would be used widely as baseline scenario. In some households of the Programme, biogas is expected to be used not only for cooking to displace the fossil fuel stoves, but also for illumination. Actually, the monitoring systems (i.e. biogas flow meters) are	It has been understood that biogas can be used for cooking and lighting (illumination) purpose of the households. However, Programme will not consider the biogas which will be used for lighting (illumination) purpose and the monitoring systems (i.e. biogas flow meters) will be installed at the inlet of the biogas cooking stoves so that amount of biogas which will be used in the cook stove will only be monitored and considered in the project. Lighting portion of the system which is considered in the published PoD-DD has now been removed from the Programme boundary. Programme is now

	<p>equipped installed at the inlet of the biogas cooking stoves and thus the amount of biogas used for illumination will not be counted into excluded monitoring, this scenario of biogas for illumination is and not relevant to the Programme.</p>	<p>replacement of traditionally fossil fuels (LPG and coal) cooking stove with biogas thermal energy. Further, biogas is a byproduct of the decomposition of organic matter by anaerobic bacteria. Organic waste will be kept into a sealed tank called a digester where it will be heated and agitated. In the absence of oxygen anaerobic bacteria consume the organic matter to multiply and produce biogas which will be consumed by household in stove for cooking. The three components which are a biogas generation system, collection system and utilization system should be included in the biogas thermal system and construction of the biogas digester will be based on the technical standard established by the Chinese government.</p> <p><input checked="" type="checkbox"/></p> <p>Applicability is justified [IRL # 25, 26, 41].</p>
<p>Biomass based cogeneration systems (consisting of steam generator (s) and steam turbine(s) that produce heat and electricity is included. "Cogeneration" means the simultaneous generation of thermal energy and electrical energy in process. For example the project activity that produces heat and power in separate element processes (for example, heat from a boiler and electricity from biogas engine) does not fit under the definition of co-generation project.</p>	<p>This applicability condition is not relevant, since the Project only involves heat generation but no electrical or mechanical energy generation is involved</p>	<p>The programme is replacement of traditionally fossil fuels (LPG and coal) cooking stove with biogas thermal energy. No cogeneration system present in the project. Hence this is not applicable.</p> <p><input checked="" type="checkbox"/></p>
<p>Emission reductions from a biomass cogeneration system can accrue from one of the following activities (a) Electricity supplied to</p>	<p>This applicability condition is not relevant, since the Project only involves heat generation but no electrical or mechanical energy gen-</p>	<p>The programme is replacement of traditionally fossil fuels (LPG and coal) cooking stove with biogas thermal energy. No cogeneration system present in the project.</p>

<p>a grid</p> <p>(b) Electricity and/or thermal energy (steam or heat) production for on-site consumption or for consumption by other facilities</p> <p>(c) Combination of (a) and (b)</p>	<p>eration is involved</p>	<p>Hence this is not applicable.</p> <p>☑</p>
<p>For co-fired systems, the total installed thermal energy generation capacity of the project equipment, when using both fossil and renewable fuel shall not exceed 45 MW thermal (see Paragraph 6 for the applicable limits for cogeneration project activities).</p>	<p>The Project activity does not involve co-fired system, so this applicability condition is not relevant.</p>	<p>The Programme activity is replacement of traditionally fossil fuels (LPG and coal) cooking stove with biogas thermal energy. No co-fired present in the project. Hence this is not applicable.</p> <p>☑</p>
<p>The total installed/rated thermal energy generation capacity of the project equipment is equal to or less than 45 MW thermal (see paragraph 6 for the applicable limits for cogeneration project activities)</p>	<p>To satisfy this point, and as shown by the inclusion criteria of a CPA, the number of households in each CPA is less than 13,800 thus the total installed thermal energy generation capacity of each CPA of the project is about 44.98MW_{th}, which does not exceed the limit of 45 MW_{th} stipulated for the chosen methodology.</p>	<p>The Thermal generation capacity should not be exceeded 45MW_{th} as each rated capacity of the biogas stove is 3.26 KW, and total biogas stoves numbers under proposed CPA should not be exceeded 13,800. This has been verified by DOE with stove specification.</p> <p>☑</p> <p>Applicability is justified [IRL# 3, 25].</p>
<p>The following capacity limits apply for biomass cogeneration units:</p> <p>(a) If the project activity includes emission reductions from both the thermal and electrical energy components, the total installed energy generation capacity (thermal and electrical) of the project equipment shall not exceed 45 MW thermal.</p> <p>For the purpose of calculating this capacity limit the conversion factor of 1:3 shall be used for converting electrical energy to thermal energy (i.e., for re-</p>	<p>This applicability condition is not relevant, since the Project only involves heat generation but no electrical or mechanical energy generation is involved.</p>	<p>The programme is replacement of traditionally fossil fuels (LPG and coal) cooking stove with biogas thermal energy. No cogeneration system involved in the project. Hence this is not applicable.</p> <p>☑</p>

<p>newable project activities, the maximal limit of 15 MW(e) is equivalent to 45 MW thermal output of the equipment or the plant);</p> <p>(b) If the emission reductions of the cogeneration project activity are solely on account of thermal energy production (i.e., no emission reductions accrue from electricity component), the total installed thermal energy production capacity of the project equipment of the cogeneration unit shall not exceed 45 MW thermal;</p> <p>(c) If the emission reductions of the cogeneration project activity are solely on account of electrical energy production (i.e., no emission reductions accrue from thermal energy component), the total installed electrical energy generation capacity of the project equipment of the cogeneration unit shall not exceed 15 MW.</p>		
<p>Project activities that seek to retrofit or modify an existing facility for renewable energy generation are included in this category.</p>	<p>The Project activity doesn't involve any retrofit or modification of existing facility for renewable energy generation. So this applicability condition is not relevant.</p>	<p>The Programme is replacement of traditionally fossil fuels (LPG and coal) cooking stove with biogas thermal energy. No retrofit or modify takes place on an existing facility for renewable energy generation in the Programme. Hence this is not applicable.</p> <p><input checked="" type="checkbox"/></p>
<p>The capacity limits specified in the above paragraphs apply to both new facilities and retrofit projects. In the case of project activities that involve the addition of renewable energy units at an existing renewable energy facility, the total capacity of the units added by the project should comply with capacity limits in paragraphs 4 to 6 and should</p>	<p>The Project does not involve addition of renewable energy units at an existing renewable energy facility, so this applicability condition is not relevant.</p>	<p>The Programme replacement of traditionally fossil fuels (LPG and coal) cooking stove with biogas thermal energy. Project does not involve addition of renewable energy units at an existing renewable energy facility. Hence this is not applicable.</p> <p><input checked="" type="checkbox"/></p>

be physically distinct from the existing units.		
New Facilities (Greenfield projects) and project activities involving capacity additions compared to the baseline scenario are only eligible if they comply with the related and relevant requirements in the General Guidelines to SSC CDM methodologies.	As per paragraph 4(c) of the latest General Guidelines to SSC CDM methodologies (Ver. 17.0), the limit of 45MW _{th} is the rated capacity of the biogas cook stoves. For each CPA to be included in the Programme which establishes several new biogas digesters for thermal application and the total output capacity be strictly controlled within 45 MW _{th} to comply with the above requirements.	According to the the latest General Guidelines to SSC CDM methodologies (Ver. 17.0), the limit of 45MW _{th} is the rated capacity of the Programme. The total biogas digesters size in each CPA shall not be exceeded 45MW _{th} as each rated capacity of the biogas stove is 3.26 KW, and total biogas stoves numbers under proposed CPA should not be exceeded 13,800. Applicability is justified <input checked="" type="checkbox"/> [IRL# 3, 25, 64]
If electricity and/or steam/heat produced by the project activity is delivered to a third party i.e. another facility or facilities within the project boundary, a contract between the supplier and consumer(s) of the energy will have to be entered into that ensures there is no double-counting of emission reductions.	Heat generation is solely used within the household and the small scale of the units makes no any transfer or delivery of heat to a third party unfeasible and impractical takes place, hence the criteria are is not applicable.	Heat produced by the biogas cooking stove will be used in the household and this heat/gas will not delivered to the third party. This has been checked by DOE through physical inspection and feasibility study report. Hence this is not applicable. <input checked="" type="checkbox"/> [IRL# 23]
If the project activity recovers and utilizes biogas for power/heat production and applies this methodology on a standalone basis i.e. without using a Type III component of a SSC methodology, any incremental emissions occurring due to the implementation of the project activity (e.g. physical leakage of the anaerobic digester, emissions due to inefficiency of the flaring), shall be taken into account either as project or leakage emissions.	The project activity utilizes biogas to generate heat for cooking. The single methodology AMS-I.C. Ver. 19.0 was used in the Programme. Therefore, emissions from the physical leakages from the biogas digester are taken into account in the calculation of project emissions (see the section E.6.2 of the PDD).	The methodology AMS.I.C (version.19) has been used by project proponent. Apart from above, methodology methodology AMS-I.I. Ver. 3.0 will be applied to monitor the net quantity of biogas supplied to the thermal energy equipment for one typical biogas unit as recommended by meth panel in clarification no. 571. <input checked="" type="checkbox"/> Applicability is justified [IRL# 3, 4].

<p>Charcoal based biomass energy generation project activities are eligible to apply the methodology only if the charcoal is produced from renewable biomass sources provided:</p> <p>(a) Charcoal is produced in kilns equipped with methane recovery and destruction facility; or</p> <p>If charcoal is produced in kilns not equipped with a methane recovery and destruction facility, methane emissions from the production of charcoal shall be considered. These emissions shall be calculated as per the procedures defined in the approved methodology AMS-III.K. Alternatively, conservative emission factor values from peer reviewed literature or from a registered CDM project activity can be used, provided that it can be demonstrated that the parameters from these are comparable e.g. source of biomass, characteristics of biomass such as moisture, carbon content, type of kiln, operating conditions such as ambient temperature.</p>	<p>This application condition is not relevant, since the Project does not involve charcoal based biomass energy generation</p>	<p>The Programme is replacement of traditionally fossil fuels (LPG and coal) cooking stove with biogas thermal energy. The Project does not involve charcoal based biomass energy generation hence this is not applicable.</p> <p><input checked="" type="checkbox"/></p>
<p>If solid biomass fuel (e.g., briquette) is used, it shall be demonstrated that it has been produced using solely renewable biomass and all project or leakage emissions associated with its production shall be taken into account in emissions reduction calculation</p>	<p>This application condition is not relevant, since the Project does not involve the application of solid biomass fuel including briquette.</p>	<p>The Programme is replacement of traditionally fossil fuels (LPG and coal) cooking stove with biogas thermal energy. The Project does not use solid biomass fuel in the project hence this is not applicable.</p> <p><input checked="" type="checkbox"/></p>
<p>Where the project participant is not the producer of the processed solid biomass fuel, the project participant and the producer are bound by a contract that shall enable the project participant to monitor</p>	<p>The Project activity does not involve the production of solid biomass fuel, so this applicability condition is not relevant.</p>	<p>The Programme is replacement of traditionally fossil fuels (LPG and coal) cooking stove with biogas thermal energy. The Project does not involve the solid biomass fuel in the project hence this is not applicable.</p>

the source of the renewable biomass to account for any emissions associated with solid biomass fuel production. Such a contract shall also ensure that there is no double-counting of emission reductions.		plicable. <input checked="" type="checkbox"/>
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Further, it was not clear in the applied methodology AMS.I.C, version.19 that how monitoring will be done for net quantity of biogas supplied to the thermal energy equipment for one typical biogas unit. Project proponent was submitted a clarification request (see clarification no. 571) to meth panel on this point. In response, SSC WG has clarified that if the project participants decide not to switch methodologies (i.e. to continue using AMS-I.C), they may use the monitoring procedures provided in AMS-I.I, for the project biogas units, as long as the applicability conditions of AMS-I.I are met and validated, including the condition that each unit (e.g. cook stove, heater) shall have a rated capacity equal to or less than 150 kW. Each rated capacity of the biogas stove is 3.26 KW which less from the 150 kW [IRL# 3, 25].

Apart from the above,, compliance with each applicability condition as listed in the chosen baseline and monitoring methodology AMS-I.I Version 03 has been demonstrated below:

Applicability Criteria	Project Case (as per PoA-DD)	Auditor's Conclusion
This category comprises activities for generation of renewable thermal energy using renewable biomass or biogas for use in residential, commercial, institutional applications. Examples of these technologies that displace or avoid fossil fuel use include but are not limited to biogas cook stoves. Biomass briquette cook stoves, small scale baking and drying systems, water heating, or space heating systems.	As described in section A.4.2.1, the CDM Project Activities covered under this PoA employed renewable Energy technology i.e. household biogas to generate thermal energy for cooking by users. In the absence of the household biogas technology, fossil fuel stoves would be used widely as baseline scenario.	The project is replacement of traditionally fossil fuels (LPG and coal) cooking stove with biogas thermal energy in the households of the zhoukou city. Biogas is a by product of the decomposition of organic matter by anaerobic bacteria. Organic waste will be kept into a sealed tank called a digester where it will be heated and agitated. In the absence of oxygen anaerobic bacteria consume the organic matter to multiply and produce biogas which will consume by household in stove for cooking. The three components which are a biogas generation system, collection system and utilization system should be included in the biogas thermal system and construction of the biogas digester will be based on the technical standard establishehd by the chinese

		government. <input checked="" type="checkbox"/> Applicability is justified [IRL # 25, 26, 41].
The total installed/rated thermal energy generation capacity of the project equipment is equal to or less than 45 MW thermal.	To satisfy this point, and as shown by the inclusion criteria of a CPA, the number of households in each CPA is less than 13,800 thus the total installed thermal energy generation capacity of each CPA of the project is about 44.98MW _{th} [*] , which does not exceed the limit of 45 MW _{th} stipulated for the chosen methodology.	The Thermal generation capacity should not be exceeded 45MW _{th} . Each rated capacity of the biogas stove is 3.26 KW so thermal energy generation from 13,800 stoves would be around 44.98MW _{th} therefore total biogas stoves numbers under proposed CPA should not be exceeded 13,800. Applicability is justified <input checked="" type="checkbox"/> [IRL# 3, 25].
Each unit (e.g. cook stove, heater) shall have a rated capacity equal to or less than 150 kW thermal. ³ Projects that include units with rated capacity greater than 150 kW thermal may explore AMS I.C .Thermal energy production with or without electricity.	As per the inclusion criteria of adding a SSC-CPA to the PoA, the rated capacity of the biogas stove to be installed is 3.26 kW	The each biogas digester capacity is 3.26 kW which less from the 150 kW therefore applicability is justified <input checked="" type="checkbox"/> [IRL# 3, 25].
For the specific case of biomass residues processed as a fuel (e.g. briquettes, wood chips), it shall be demonstrated that: (a) It is produced using solely renewable biomass (more than one type of biomass may be used). Energy use for renewable biomass processing (e.g. shredding and compacting in the case of briquetting) may be considered as equivalent to	This application condition is not relevant, since the Project does not involve biomass residues processed as a fuel.	The Programme replacement of traditionally fossil fuels (LPG and coal) cooking stove with biogas thermal energy. The Project does not use biomass residue in the project hence this is not applicable. <input checked="" type="checkbox"/> [IRL # 25, 26, 41]

^{*}Refer to Para5, Sector A4.2.2

<p>the upstream emissions associated with the processing of the displaced fossil fuel and hence disregarded;</p> <p>(b) The “General guidance on leakage in biomass project activities” (attachment C to Appendix B of 4/CMP.1 Annex II) shall be followed;</p> <p>(c) The project participant can monitor the mass, moisture content and NCV of the resulting biomass fuel, through sampling that meets the confidence/precision level of 90/10;</p> <p>(d) Where the project participant is not the producer of the renewable fuel, the project participant and the producer are bound by a contract that shall enable the project participant to monitor the source of renewable biomass to account for any emissions associated with biomass production (as per 4 (b) above). Such a contract shall also ensure that there is no double counting of emission reductions.</p>		
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The assessment was carried out for each applicability criterion and included, among other checks, a compliance check of the PoA with the applicability conditions in regard to baseline setting and eligible project measures. This assessment also included the review of secondary sources to demonstrate the compliance with applicability conditions.

The methodology-specific protocol, included in Annex 1, documents the assessment process. The results of the compliance check as well as relevant evidence are detailed in the protocol and the information reference list.

- The Programme is replacement of traditionally fossil fuels (LPG and coal) cooking stove with biogas thermal energy within Zhoukou City [IRL # 23, 41].
- CPA's under this POA will not be considered as a de-bundled component of a large scale activity.
- The thermal generation capacity by a single CPA shall not be exceeded 45MW_{th}. [IRL # 64]

- The SSC WG has allowed to monitor the biogas supplied to the thermal energy equipment for one typical biogas unit as per AMS.I.I, version. 03 in the clarification request response no SSC_571 dated on 14.10.2011 [IRL # 4].
<http://cdm.unfccc.int/methodologies/SSCmethodologies/clarifications/53546>
- The operation and maintenance plan of each CPA would be followed as procedure defined in POA DD and implementation plan [IRL # 7].
- A CER transfer agreement with stove recipients where users will ensure that CERs will be claimed and these belong to Zhoukou New Energy Development Co., Ltd. [IRL # 35].

Biogas digester system stoves will be replaced with unique serial number including record of a location, name of the stove and all records would be screened by CME. The records will also be cross checked with CPA registry which will confirm that the records are authentic and no double counting has occurred.

TÜV SÜD confirms that the chosen baseline and monitoring methodologies (AMS.I.C and AMS.I.I) are applicable to the PoA Programme and there are no cross effect between both methodologies as per para 10 of Annex-4 of EB 63. Emission sources, not addressed by the applied methodology and expected to contribute more than 1% of the overall expected average annual emission reductions, have not been identified.

3.8.2 CPA boundary

The CPA boundary was assessed considering information gathered from the physical site inspection, interviews, and secondary evidence received on the design of the PoA. The information includes the location of the CPA areas; GPS coordinates of the specific household, stove design and feedback from the stakeholders regarding stove usage.

The project boundary is the physical, geographical location of each stove installed in Zhoukou city. The sources and gases within the boundary have been considered in a clear manner. The CO₂ emissions from the combustion of fossil fuels (LPG and coal) for cooking have been included.

The major source of emissions in the baseline and project activity is due to CO₂ due to combustion of coal and LPG for cooking by fossil fuels stove. TÜV SÜD confirms according to the para 80 of the VVM that the identified boundary, the selected sources, and gases as documented in the CPA-DD are justified for the project activity and are fully in line with the requirements set by the applied methodology.

3.8.3 Baseline identification

The Zhoukou City PoA is a voluntary coordinated action as evident through implementation plan. As per the PoA-DD, the possible alternative scenarios are:

- The proposed project activity undertaken without being registered as part of a CDM Program of Activities.
- continuation of fossil fuels for cooking
- Switch current cooking fuels to other fuels/heat sources for cooking such as biomass
- Introduction of solar cookers or solar ovens

Based on the on-site interviews with Zhoukou New Energy Development Co., Ltd. and the host country experience of the audit team it is confirmed that there is no mandatory legal requirement for replacing fossil fuel stoves (LPG and Coal) with biogas thermal energy in the households of Zhoukou City. The confirmation letter of the Agriculture Bureau of Zhoukou City, Henan province has been submitted to confirm this criterion [IRL# 31].

The feasible fossil fuel alternative is biomass cooking stove. However, biomass stove could not be a viable alternative for the project due to unsteady availability of biomass resources throughout the year in Zhoukou City. This was validated from article of Henan agriculture (published on 27.07.2006) [IRL# 21] and China Energy statistical Yearbook [IRL# 46]. Apart from this, calorific value of biomass is low as compared to coal according to the Henan agriculture site [IRL# 13] and also households in the region refrain from burning biomass for cooking purposes in order to avoid indoors pollution [IRL# 13], therefore biomass stove can't be considered as a viable option for households of the Zhoukou city. Even electricity is not feasible because households need to purchase electric stove which is the additional cost for them as well as Chinese dishes preparation required very high temperatures for the traditional Chinese cooking and such high temperature will not reach unless they consume a considerable amount of electricity, which would make even more uneconomical. LPG could be an alternative household energy source but require the creation of a supply chain for LPG cylinders in order to grant a steady access to these energy sources, which is considered unfeasible due to the extension of the Henan Province and, in many cases, the dispersion and inaccessibility of the households. This was validated by DOE with report published in chinanews on barriers of the implementing the cook stoves [IRL# 19].

Further, solar cooker or solar oven could be a possible scenario of the project. However, solar cooker or oven need sunlight to operate but rate of the sunlight available in Henan province is very low as well as solar cooking system is not very popular in rural china because solar cooker is not suitable for preparing traditional meals therefore this scenario is not an alternative for the project [IRL# 22, 54].

Apart from above options, coal is the fuel which is easily available and accessible to rural households in the Henan Province. Also, temperature required for traditional Chinese cooking could be easily achieved through coal based cook stove [IRL# 12, 18].

Thus in light of the above, coal and LPG based stove has been identified as the likely baseline scenario fuel [IRL # 46, 48, 49, 50].

The information presented in the PoA-DD has been verified during the on-site visit and review of baseline survey by Mr. Hongbo Chen of Research Centre of Urban Development and Environment Research Centre for Sustainable Development Chinese Academy of Social Sciences in October 2011 for this project. Further, Zhoukou city rural energy office has provided a confirmation letter on baseline survey data [50]. The sources referenced in the PoA-DD have been quoted correctly.

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

Based on the validated assumptions used for project activity calculations, TÜV SÜD considers that the identified baseline scenario is reasonable.

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

A verifiable description of the baseline scenario has been included in the PoA-DD.

In regard to item 87 of VVM v1.2, TÜV SÜD confirms the following statements:

- (a) All the assumptions and data used by the project participants are listed in the PoA-DD, including their references and sources;
- (b) All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PoA-DD;
- (c) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence, and can be deemed reasonable;

- (d) Relevant national and/or sectoral policies and circumstances are considered and listed in the PoA-DD;
- (e) The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario, and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity.

3.9 Additionality

3.9.1 Prior consideration of the clean development mechanism

The start date of the PoA has been defined as 1st July 2007, based on the construction date of the first biogas digester [IRL# 40]. As this is before 02nd August 2008 and also before the start of the GSP (30th December 2009) therefore, the prior and ongoing CDM consideration has been assessed as follows:

- CPA list sent to UNFCCC before 31.01.2010 [IRL# 69]
- Project Plan was finished on August 2006 [IRL# 33]
- Minutes of the Board meeting which held on October 2006 [IRL# 34]
- Construction date of the first biogas digester in the programme on 01.07.2007 [IRL# 40]
- Notification issued on 21.07.2007 for stakeholder consultation meeting [IRL# 5]
- Transfer contract of project was on 15.09.2008 signed between Zhoukou Coal Company and Zhoukou New Energy Development Co., Ltd [IRL# 37]
- PDD preparation and negotiation with CER buyer has been carried out during the period December 2008 to December 2009 [IRL# 57]
- Global Stakeholder Process (GSP) was started on 30.12.2009 [IRL# 2]
- LoA for China (July 2010) [IRL#9], LoA for UK (April 2012) [IRL#8].

3.9.2 Additionality of PoA

The additionality of the programme has been demonstrated at POA level and same is presented as per “Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmed of activities (version.01)” in section A.4.3 of the PoA-DD. The approach used in the PoA-DD has been assessed initially through the document review followed by on-site discussions. Finally, the data, rationales, assumptions, justifications, and documentation provided have been verified using local knowledge as well as sectoral and financial expertise.

- The proposed PoA is a voluntary action by the coordinating/managing entity – Zhoukou New Energy Development Co., Ltd.. Based on the submitted documents and substantiation it is evident that this voluntary coordinated action would not be implemented in the absence of the PoA [IRL# 44].
- It has been clearly demonstrated that there is no mandatory policy or regulation in the host country enforcing residential users to replace fossil fuels (coal and LPG) with biogas digester based cooking stove. Also, there are no regulations prohibiting the continuing use of traditional stoves. This was confirmed based on the on-site interviews with Zhoukou New Energy Development Co., Ltd. officials and the host country experience of the audit team [IRL# 9, 31].

Programme falls under small scale therefore according to the para 9 of “Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmed of activities (version.01)”, project proponent has demonstrated additionality of the programme at PoA level as per “Guidelines of the demonstration of additionality of small-scale project activities (Ver. 09)”.

According to the para 2 (c) of “Guidelines of the demonstration of additionality of small-scale project activities (Ver. 09)”, additionality explanation is not required for the positive list of technologies and project activity types that are defined as automatically additional for project sizes up to and including the small-scale CDM thresholds (e.g. installed capacity up to 15 MW), and it should fulfill the the criteria “project activities solely composed of isolated units where the users of the technology/measure are households or communities or Small and Medium Enterprises (SMEs) and where the size of each unit is no larger than 5% of the small-scale CDM thresholds.”

It has been verified from physical inspection of the biogas stove using in household and database of the biogas digester [IRL# 68] that PoA is composed entirely of isolated units and the users of the technology are households. Also, each biogas digester will provide gas to one household and size of the each stove is 3.26 kW which is less from 750 kW according to the requirement of footnote 1 of the “Guidelines of the demonstration of additionality of small-scale project activities”. Since size of the stove is 3.26 kW therefore it is clearly understandable that the size of each stove will not be larger than 5% of the small-scale CDM thresholds. This has been verified by DOE with technical specification of the stove [IRL# 25] and feasibility study report [IRL# 23].

As per above, it is clear that technology of the programme is fulfilling the criteria of 2 (c) of “Guidelines of the demonstration of additionality of small-scale project activities (Ver. 09)”, therefore it is automatically additional and documentation of barriers is not required.

Based on the aforementioned approach, TÜV SÜD confirms that the proposed PoA is additional.

3.9.3 Approach for demonstrating CPA additionality

Project proponent has demonstrated the additionality at PoA level and it has been demonstrated as per “Guidelines of the demonstration of additionality of small-scale project activities (Ver. 09)”.

As PoA Programme is fulfilling the criteria of 2 (c) of “Guidelines of the demonstration of additionality of small-scale project activities (Ver. 09)”, therefore it is automatically additional and documentation of barriers is not required.

However, the following criteria of the 2 (c) of “Guidelines of the demonstration of additionality of small-scale project activities (Ver. 09)” will be checked during each CPA inclusion time

- 1) The CPA is composed of isolated biogas digesters- It will be checked by DOE with database of the each CPA [IRL# 68]
- 2) The amount of isolated biogas digesters is less than 13,800: It will be checked by DOE with database of the each CPA [IRL# 68]
- 3) The isolated biogas digester are only used by households; It will be checked by DOE with database of the each CPA [IRL# 68]
- 4) The intalled capacity of each biogas stove is less than 750kW. It will be checked by DOE with stove speacification [IRL# 25] and emission reduction spread sheet of the each CPA.

3.10 Emission Reductions from a typical CPA

The procedures provided in the methodology are correctly depicted in the PoA-DD and the template CPA-DD.

- Efficiency of the coal stove is 47% which is based on the Edwards R, et al., 2004, Improved Household Stoves in China: An Assessment of the National Improved Stove Program(NISP) and article in Energy Policy 32 (2004) 395–411; Implications of changes in household stoves and fuel use in China.
- Efficiency of the LPG stove 100% is assumed for conservative purpose.
- Emission factor of the coal and LPG are taken from IPCC 2006 Revised Guidelines Volume 02, Chapter 01, Table 1.3
- Net calorific Value (NCV) 20,908 KJ/m³ of the biogas is taken from the Energy Statistical Yearbook
- Thermal efficiency of the biogas stove is 55% which is based on the Domestic Biogas, GB/T3606-2001
- Global Warming Potential of methane is 21 which is based on IPCC Second Assessment Report, 1995.
- Fraction of methane (X_{CH_4}) in the biogas value is 0.6 m³ CH₄/m³
- CH₄ density (0.00067 tCH₄/m³CH₄ at room temperature (20°C) and 1 atm pressure)
- Number of biogas system will be monitored annually for each CPA
- Fraction of the coal and LPG stoves are taken from baseline survey.
- The proportion of the operating stove will be obtained from annual monitoring survey. The survey will be done annually as per the guidelines given in the “Standard for sampling and surveys for CDM Project activities and programme of activities Ver. 03.0” by using 90% confidence interval and a 10% margin of error for the sampling parameter. Simple random sampling approach has been adopted according to the para 8 of “Guidelines for sampling and surveys for CDM project activities and programme of activities” (Version 2.0) to calculate the sample size programme as nature of the programme is homogeneous and same type and specification of the stove will be distributed in the programme. The detailed sampling procedure has given in monitoring plan under parameter “Proportion of $N_{k,0}$ that remain operating at year y ” table in section E.7.1. of the PoA-DD and A.4.4.2. Further, according to the clarification request no. 571 (http://cdm.unfccc.int/Panels/ssc_wg/meetings/034/ssc_034_report.pdf), at least five campaigns per digester size need to be implemented in each year to monitor the quantity of generated biogas for one typical biogas unit of the size k . It can be checked from the biogas digester database and information available on the CPA sampling in sampling calculation spread sheet and CPA-DD which will be submitted to the DOE during CPA inclusion time.
- If any physical leakage in the biogas digester system then the same will be considered under project emission. Project emission will be calculated as per equation 5 of the PoA-DD. It is consistent with the approach of paragraph 13 of methodology AMS-I.C. Ver. 19.0 and paragraph AMS-III.D (version 18). Physical leakage 10% is more conservative as compared to the 0.05 m³ biogas leaked/m³ biogas produced given in paragraph 13 (b) of AMS-III.D (version 18).

The formulae are correctly presented for the determination of emission reductions.

TÜV SÜD has assessed the calculations of emission reductions. Corresponding calculations have been carried out based on calculation spreadsheets. The parameters and equations presented in the PoA-DD, as well as other applicable documents, have been compared with the information and requirements presented in the methodology. An equation comparison has been made to ensure consistency between all the formulae presented in the PoA-DD, template CPA-DD, calculation files, methodology AMS.I.C version 19 and AMS.I.I, version 3.0.

The assumptions and data used to determine the emission reductions are listed in the PoA-DD and all the sources have been checked and are reasonable.

Based on the information reviewed it is confirmed that the sources used are correctly quoted and interpreted in the PoA-DD.

In accordance with paragraph 92(e) of VVM 1.2, the calculation spreadsheets and the emission reductions can be replicated using the data and parameter values provided in the design documents.

In summary, the calculations of emission reductions are considered correct and are replicable. The baseline methodology has been applied correctly according to requirements.

3.11 Monitoring Plan of a typical CPA

The monitoring plan presented in the PoA-DD complies with the requirements of the applicable methodologies. The assessment team has verified all parameters in the monitoring plan against the requirements of the methodology and no deviations have been found.

The procedures have been reviewed by the assessment team through document review and interviews with the relevant personnel. It is not clear in the applied methodology AMS.I.C, version.19, that how monitoring will be done for net quantity of biogas supplied to the thermal energy equipment for one typical biogas unit. Project proponent was submitted a clarification request (see clarification no. 571) to meth panel on this point. In response, SSC WG has allowed to monitor the net quantity of biogas supplied according to the monitoring procedure defined in the methodology AMS-I.I. Ver. 3.0.

The information provided has allowed the assessment team to confirm that the proposed monitoring plan is feasible within the project design. The relevant points of monitoring plan have been discussed with the PoA managing entity and the CPA implementers. Specifically; these points include the monitoring methodology, data management, and the quality assurance and quality control procedures to be implemented in the context of the project. Therefore, the PoA managing entity and/or CPA implementer(s) will be able to implement the monitoring plan and the achieved emission reductions can be reported ex-post and verified.

3.11.1 Parameters determined ex-ante

The parameters that are determined ex-ante are:

$\eta_{BL,thermal,coal}$ - Efficiency of the coal stove. The value 47% is taken from the Edwards R, et al., 2004, Improved Household Stoves in China: An Assessment of the National Improved Stove Program(NISP) and article in Energy Policy 32 (2004) 395–411; Implications of changes in household stoves and fuel use in China. [IRL # 18]

$\eta_{BL,thermal,coal}$ - Efficiency of the LPG stove. The value 100% is assumed for conservative purposes.

EF_{coal,CO_2} - CO₂ emission factor per unit of coal. The value 89.5tCO₂/TJ is taken from IPCC 2006 Revised Guidelines Volume 02, Chapter 01, Table 1.3 according to the requirement of the applied methodology. [IRL # 52]

EF_{LPG,CO_2} - CO_2 emission factor per unit of LPG. The value $63.07tCO_2/TJ$ is taken from IPCC 2006 Revised Guidelines Volume 02, Chapter 01, Table 1.3 according to the requirement of the applied methodology.

NCV_{biogas} - Net calorific value of the biogas. The value $20,908\text{ KJ/m}^3$ is taken Appendix IV, China Energy Statistical Yearbook (2010) [IRL # 52]

η_{pj} - Efficiency of the domestic stove. According to the China National Standard for Domestic Biogas, *GB/T3606-2001*, the rated thermal efficiency of a biogas should be above 55%. However, as a conservative approach value 55% is taken. [IRL # 26]

GWP_{CH_4} - Global Warming Potential of methane. The value 21 is taken as per *IPCC Second Assessment Report, 1995*.

D_{CH_4} - Methane density. The value $0.00067\text{ tCH}_4/\text{m}^3$ is taken from the methodology AMS-III.D. Ver.18.0 "methane recovery in animal manure management system".

X_{CH_4} - Fraction of methane in the biogas. The value $0.6\text{ m}^3\text{CH}_4/\text{m}^3$ is taken from the methodology AMS-III.D. Ver.18.0 "methane recovery in animal manure management system".

In summary, the parameters determined ex-ante are conservative and appropriate and they have been presented correctly according to requirements of the applied methodology.

3.11.2 Parameters determined ex-post

The parameters that are to be monitored ex-post are:

$N_{k,0}$ - Number of registered biogas units of the size k commissioned during the monitoring period for each CPA.

$n_{k,y}$ - Proportion of $N_{k,0}$ that remain operating at year y (fraction). This value would be obtained through annual inspection survey. The survey will be done annually as per the guidelines given in the "Standard for sampling and surveys for CDM Project activities and programme of activities Ver. 03.0" by using 90% confidence interval and a 10% margin of error for the sampling parameter. Simple random sampling approach has been adopted according to the para 8 of "Guidelines for sampling and surveys for CDM project activities and programme of activities" (Version 2.0) to calculate the sample size programme as nature of the programme is homogeneous and same type and specification of the stove will be distributed in the programme. The detailed sampling procedure has given in monitoring plan under parameter "Proportion of $N_{k,0}$ that remain operating at year y " table in section E.7.1. of the PoA-DD and A.4.4.2. Further, it was not clear in the applied methodology AMS.I.C, version.19, that how monitoring will be done for net quantity of biogas supplied to the thermal energy equipment for one typical biogas unit. Project proponent has submitted a clarification request (see clarification no. 571) to meth panel on this point. In response, SSC WG has allowed to monitor the net quantity of biogas according to the monitoring procedure defined in the methodology AMS-I.I. Ver. 3.0 if applicability conditions of AMS-I.I are met [IRL # 4]. It can be checked from the biogas digester database and information available on the CPA sampling in sampling calculation spread sheet and CPA-DD which will be submitted to the DOE during CPA inclusion time. The proposed sampling plan has been verified by DOE (see section 3.7 of the report) and accepted.

f_{coal} - Fraction of households using coal as the main fuel for cooking in the baseline scenario. This value would be obtained from the baseline survey. [IRL # 48, 49, 50]

f_{LPG} - Fraction of households using LPG as the main fuel for cooking in the baseline scenario. This value would be obtained from the baseline survey. [IRL # 48, 49, 50]

$B_{biogas,k,y}$ - The net quantity of the biogas consumed in year y (tons). It was not clear in the applied methodology AMS.I.C, version.19 that how monitoring will be done for net quantity of biogas supplied to the thermal energy equipment for one typical biogas unit. Project proponent submitted a clarification request (see clarification no. 571) to meth panel on this point. In response, SSC WG has clarified that if the project participants decide not to switch methodologies (i.e. to continue using AMS-I.C), they may use the monitoring procedures provided in AMS-I.I, for the project biogas units, as long as the applicability conditions of AMS-I.I are met and validated, including the condition that each unit (e.g. cook stove, heater) shall have a rated capacity equal to or less than 150 kW. Each rated capacity of the biogas stove is 3.26 KW which less from the 150 kW [IRL# 3, 25]. At least five campaigns per digester size need be implemented in each year to monitor the quantity of generated biogas for one typical biogas unit of the size k according to the requirement of the methodology AMS.I.I version (3.0) "Biogas/biomass thermal applications for households/small users". Further, monthly average values will be annualised taking into account seasonal variation in gas production which is mainly a function of ambient temperature to fulfill the requirement of 'Table 1: Parameters for monitoring during the crediting period' of AMS I.I (version. 03.0).

Ex ante value used for this parameter in the PoA DD is validated by the weblink (<http://www.cnki.com.cn/Article/CJFDTotat-NYGU201003049.htm>)

The operational and management structure has been clearly described in chapters A.4 and E.7.2. of the PoA-DD and in compliance with the envisioned situation. The responsibilities and institutional arrangements for data collection and archiving has been clearly provided. The information provided in the PoA-DD could be confirmed based on the on-site interviews and also through the submitted documentary evidence [IRL# 7]. Hence it could be confirmed that the PP would be able to implement monitoring plan as per the methodology and UNFCCC requirements.

3.12 Stakeholder Consultation

It has been indicated that the local stakeholder consultation is done at the PoA level. The justification of doing local stakeholder consultation at the PoA level has been provided. The stakeholder consultations of PoA cover the districts of Zhoukou City.

The relevant local stakeholders have been invited through notification [IRL # 5]. The summary of this stakeholder meeting has been provided. The assessment team has reviewed the documentation in order to validate the inclusion of relevant stakeholders. Team local expertise has confirmed that the communication method used to invite the stakeholders is appropriate. The summary of comments presented in the PoA-DD has been verified with the documentation of the stakeholder consultation and has been found to be complete [IRL # 5, 6].

Comments presented by the local stakeholders have been taken into account by the PoA managing entity and has been verified with information obtained during interviews.

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

3.13 Environmental Analysis

The project participants undertake environmental impact assessment. An environment assessment need to be done before starting the programme according national Policy and regulation of China [IRL#65]. Project proponent has conducted Environment Impact Assessment (EIA) [IRL# 27] at the PoA level of the project to comply these requirements. The EIA report has been approved by the Zhoukou City Environmental Protection Bureau [IRL# 28]. The approval confirms that project is in line with National Policy of Agriculture structure adjustment and development of new type rural economic. Also, an EIA is not required for typical CPAs included in the proposed PoA. This has been

confirmed by the Environment Impact Assessment Law of the People's Republic of China [IRL# 65],
Further, likely environmental impacts have been discussed in the PoA-DD [IRL# 27, 56]

No negative impact have been observed for this PoA and same has been indicated in the PoA-DD.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

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

All key information gathered is presented in the table below

GSP Comments

website: http://cdm.unfccc.int/ProgrammeOfActivities/Validation/DB/PX3DLROQVMMON45T0ZHHBM4DKLSCZJ/view.html	
Starting date of the global stakeholder consultation process: 2009-12-30	
Comment submitted by: None	Issues raised: -
Response by TÜV SÜD: -	

5 VALIDATION OPINION

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

Henan Province Zhoukou City Rural Household Biogas Development Programme (2007-2010)

Standard auditing techniques have been used for the validation of the project. A methodology-specific protocol for the PoA has been prepared to conduct the audit in a transparent and comprehensive manner.

The review of the PoA design documentation, subsequent follow-up interviews, and further verification of references have provided TÜV SÜD with sufficient evidence to determine the fulfilment of stated criteria in the protocol. In the opinion of TÜV SÜD, the PoA meets all relevant UNFCCC requirements for the CDM if the underlying assumptions do not change. TÜV SÜD recommends the PoA project for registration by the CDM Executive Board.

An analysis, as provided by the applied methodology, demonstrates that the proposed PoA is not a likely baseline scenario. Emission reductions attributable to the PoA are additional to any that would occur in the absence of the programme. Given that the PoA is implemented as designed, the CPAs under the same are likely to achieve emission reductions.

The validation is based on the information made available to TÜV SÜD, as well as the engagement conditions detailed in this report. The validation has been performed following the VVM requirements. The single purpose of this report is its use during the registration process as part of the CDM project cycle.

Based on the work described in this report, nothing has come to our attention that causes us to believe that any project section or issue has not been covered by the validation process.

Pune, 29/12/2012



Certification Body "Environment and Energy"

TÜV SÜD South Asia Pvt Ltd

Validation of the CDM PoA:
Henan Province Zhoukou City Rural Household Biogas Development Programme
(2007-2010)



Annex 1: Validation Protocol

Validation Protocol CDM-PoA-DD

Project Title: Henan Province Zhoukou City Rural Household Biogas Development Programme (2007-2010)

Date of Completion: 2012-12-29

Number of Pages: 78



Table 1a

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
A. General description of small-scale programme of activities (PoA)				
A.1. Title of the small-scale programme of activities (PoA)				
A.1.1. Does the used project title clearly enable to identify the unique CDM programme of activities?	2	Yes, the PoA title clearly enables to identify the unique CDM PoA.	<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?	2	Yes, the GSP-PoA-DD is indicated as version number 01, dated 28/08/2009.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.1.3. Is this consistent with the time line of the project's history?	2	Yes, this is considered consistent	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2. Description of the small-scale programme of activities				
A.2.1. Is the description delivering a transparent overview of the general operating and implementing framework of the PoA?	2,23 37, 45	<p>Zhoukou New Energy Development Co.Ltd. is the coordinating/managing entity of the PoA after August 2008. The CDM programme activities (CPAs) included in the PoA will be implemented between 2007 and 2010 in Zhoukou City, Henan Province. The PoA involves implementation of household biomass digester in Zhoukou City, Henan Province.</p> <p><u>Clarification Request No. 1.</u></p> <p>Zhoukou Coal Industry Company was the coordinating/ managing entity before August 2008 and after August 2008, the coordinating/managing entity is Zhoukou New Energy Development Co.Ltd. It needs to be clarified in the POA DD how Zhoukou New Energy De-</p>	CR	<input checked="" type="checkbox"/>

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		<p>velopment Co.Ltd. has received consent from Zhoukou Coal Industry Company to coordinating/managing the biogas digester before August 2008 (which was installed by Zhoukou Coal Industry Company) . Evidence of the contract agreement (English version) needs to be submitted to DOE.</p> <p>Further, information about the status of latest project implementation is needs to be clarified in the PoA DD.</p> <p><u>Clarification Request No. 2.</u></p> <p>Project activity displaces traditional cooking system with biogas digester cooking system. However, it is understood that biogas will be used for lighting purpose also (Fig 3 of the PDD indicates lamp as well).Project proponent need to clarify.</p> <p><u>Clarification Request No. 3.</u></p> <p>Project activity replaces coal based cooking system with biomass based cooking system. However, some of the places in POA-DD mentioned project activity replacing the fossil fuel cooking system. This information shall be consistent throughout the PoA DD.</p>		
A.2.2. Is the policy/measure or stated goal of the PoA clearly and unambiguously presented?	2, 23, 35, 36	Yes, it was understood that the PoA objective is to implementation of household biogas digester based cooking system in Zhoukou City, Henan Province.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.3. What proofs are available demonstrating that the project description is in compliance with the actual situation or planning?	2,23, 27, 28, 33, 41	<p>The following documents were verified on site and have been submitted</p> <ol style="list-style-type: none"> 1. Feasibility Study Report 2. EIA Certificate 3. Mid-long term plan of rural household biogas development at 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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		Zhoukou city, Henan province 4. Implementation Agreement 5. Zhoukou City rural biogas digester construction Acceptance Certification		
A.2.4. Is the information provided by these proofs consistent with the information provided by the PDD?	2,23, 27, 28, 33, 41	Yes, the information provided by the proofs consistent with the information provided by the PoA-DD. However, <u>Clarification Request No. 4.</u> POA DD stated " <i>the main users of the Programme are rural households with medium and lower income in Zhoukou City</i> ". It needs to be further clarified with supportive (English version) how project proponent are identifying medium and lower income group? The procedure shall be in line with national policy. <u>Clarification Request No. 5.</u> Provide the supportive (English version) to verify the statement " <i>2.96Kg coal is consumed every day</i> "	CR	<input checked="" type="checkbox"/>
A.2.5. Is all information presented consistent with details provided by further chapters of the PDD?	2,23, 27, 28, 33, 41	Yes, the information provided by the proofs consistent with the information provided by further chapter of the PoA-DD. However, <u>Clarification Request No. 6.</u> It was observed during site visit that project activity displaces coal based traditional cooking system with biogas cooking system. It needs to be transparently clarified throughout the PoA DD. <u>Clarification Request No. 7.</u> PoA DD stated " <i>There is no mandatory law to force rural households</i> ". PP need to clarified the reference document name or weblink (also submit English version) which can confirm this statement.	CR	<input checked="" type="checkbox"/>

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A.2.6. Is there a valid confirmation that the proposed PoA is a voluntary action by the coordinating/managing entity?	2,23, 27, 28, 33, 41	Yes, it has been indicated that proposed PoA is a voluntary action by the coordinating/managing entity – Zhoukou New Energy Development Co.Ltd.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.7. Does the description of the technology to be applied provide sufficient and transparent input to evaluate its impact on the greenhouse gas balance?	2, 23	Yes, the biogas stove would result in reduction of fossil fuels consumption thereby leading to lesser GHG emissions.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.8. Is the brief explanation how the project will reduce greenhouse gas emission transparent and suitable?	2, 23	Yes, the explanation is transparent and suitable.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.3. Coordinating/managing entity and participants of SSC-PoA				
A.3.1. Is the form required for the indication of project participants correctly applied?	2	Yes, the form has been correctly applied.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.3.2. Is the participation of the listed entities or Parties in the PoA confirmed by each one of them?	8, 9, 24	The Modalities of communication (MoC) and LoA's has been submitted	<input checked="" type="checkbox"/>	<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)?	8, 9,24	Zhoukou New Energy Development Co.Ltd. has been indicated as the coordinating/managing entity and has been consistently included in Annex-1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.3.4. Is it evident that the coordinating or managing entity of the PoA is the entity which communicates with the Executive Board	2, 9, 24	It has been understood that Zhoukou New Energy Development Co.Ltd. is the coordinating/managing entity and same has been consistently included in Annex-1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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(EB)?				
A.3.5. Is it evident whether individual project participants are involved in one of the CPAs related to the PoA?	2, 9,24	Zhoukou New Energy Development Co.Ltd. and Gazprom Marketing and Trading Ltd. are the project participants of the programme.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4. Technical description of the small-scale programme of activities				
A.4.1. Location of the programme of activities				
A.4.1.1. Does the information provided on the location of the project activity allow for a clear definition identification of the boundary for the PoA in terms of a geographical area, within which all CPAs included in this PoA will be implemented??	2, 11	The CPAs under the PoA will be implemented throughout the Zhoukou City, Henan Province, P.R. China. However, <u>Corrective Action Request No.1.</u> Project proponent need to define clearly the geographical area of the boundary, as of para 142 of CDM project standard.	CAR	<input checked="" type="checkbox"/>
A.4.1.2. Is it the consideration of all applicable national and/or sectoral policies and regulations of each host country within the boundary evident and substantiated?	2,31	<u>Corrective Action Request No.2.</u> It has been indicated in section A.2 of the PDD that there are no mandatory law to force rural households to setup biogas digesters in P.R. China. Project proponent need to provide the supportive (English version) to verify the statement.	CAR	<input checked="" type="checkbox"/>
A.4.1.3. Is/are the Host Part(ies) stated?	2,9	People's Republic of China has been stated as the host party.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.2. Description of a typical small-scale CDM programme activity (CPA)				
A.4.2.1. Is it unambiguously stated which technology or measures are to be employed by the SSC-CPA?	2, 7,41, 51	<u>Clarification Request No. 8.</u> Project proponent need to provide the supportive (English version) to verify the technical flow description given in the section A.4.2.1 on bio digester process flow and technology. Further, it needs to be ensured that biogas digesters system design	CAR CR	<input checked="" type="checkbox"/>

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		has been build according to the national standard. <u>Corrective Action Request No.3.</u> Project need to include the all eligibility criteria for inclusion of the each CPA in the PoA as per “Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for PoA” (Ver. 01.0),		
A.4.2.2. Are there clear and unambiguous eligibility criteria for the inclusion of a SSC-PoA into the PoA?	2, 23, 29, 35	<u>Clarification Request No. 9.</u> During site audit it was observed that before installation of the biogas digesters some of the household was using LPG as fuel in their cooking system. However, as per PoA DD only those cooking stoves which were earlier using coal as a fuel in their cooking stoves would come under this project activity. It needs to be clarified how project activity has been removed LPG cooking stoves from the project activity. <u>Clarification Request No. 10.</u> Project proponent need to clarify how 16,000 biogas cooking stove users capacity is less than the thermal general capacity 45MW _{th} of the SSC criteria.	CAR CR	<input checked="" type="checkbox"/>
A.4.2.3. Is the type correctly identified and indicated?	2	<u>Corrective Action Request No.4.</u> Project proponent need to indicate the type and category in section A.4.2.1 of the PoA-DD.	CAR	<input checked="" type="checkbox"/>

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A.4.2.4. Does the technical design of the project activity reflect current good practices?	2, 41, 51	The PoA replaces fossil fuel based traditional cooking system to biogas digester based cooking system and thus reflect current good practices.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.2.5. Does the implementation of the project activity require any technology transfer from Annex-I-countries to the host country (ies)?	2, 41, 51	<u>Corrective Action Request No.5.</u> Project proponent need to indicate whether the implementation of the project activity require any technology transfer from Annex-I-countries to the host country.	CAR	<input checked="" type="checkbox"/>
A.4.2.6. Is the technology implemented by the project activity environmentally safe?	2, 27, 28	Yes, the technology implemented by the PoA programme is environmentally safe.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.2.7. Is the information provided in compliance with actual situation or planning?	2	Project proponent need to refer above CR in section A.2.1	CR	<input checked="" type="checkbox"/>
A.4.2.8. 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?	2,41, 51	<u>Clarification Request No. 11.</u> Project proponent need to clarify about the possibility of replacement of the biogas cooking stoves under the PoA by other or more efficient technologies within the project period.	CR	<input checked="" type="checkbox"/>
A.4.2.9. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	2, 41, 51	As the PoA envisages replacement of the coal based traditional cooking system with biogas digester based cooking system therefore it is unlikely that the technology is likely to be substituted within the project period.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.2.10. Does the project require extensive initial training and maintenance efforts in order to be carried out as scheduled during the project period?	7	Project Proponent will provide the training to the local technician through development programme and will also supply the training material during the programme.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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A.4.2.11. Is information available on the demand and requirements for training and maintenance?	7	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.2.12. Is a schedule available for the implementation of the project and are there any risks for delays?	33	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.3. Description of how the anthropogenic emissions of GHG by sources are reduced by a SSC-CPA below those that would have occurred in the absence of the registered PoA (assessment and demonstration of additionality of the PoA as a whole)				
A.4.3.1. Is it evident and clearly documented that the proposed PoA is a voluntary coordinated action?	18, 19, 23, 25, 29, 32, 42, 44, 46, 47, 48, 49, 50 52	<p>Yes, it has been clearly indicated that the proposed PoA is a voluntary coordinated action by Zhoukou New Energy Development Co.Ltd.</p> <p><u>Clarification Request No. 12.</u></p> <p>It is not described transparently what barriers were behind for not chosen other cooking technologies? The justification shall be substantiated with relevant supportive (English version).</p> <p><u>Clarification Request No. 13.</u></p> <p>Project participant shall demonstrate the investment barrier through financial calculation analysis approach where it will also demonstrate how CDM fund could alleviate the same barrier.</p> <p>Further, it ensures that the technical barriers shall be in line Annex-13 of EB 50.</p> <p><u>Clarification Request No. 14.</u></p> <p>The investment barriers description given in point (a) under section A.4.3 is not in line with the investment description given in detailed under page 9 of POA DD.</p> <p><u>Clarification Request No. 15.</u></p>	CR	<input checked="" type="checkbox"/>

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		.Provide the supportive (English evrsion) to validate the statement <i>"Furthermore, as middle and low income households have difficulties in access in financing from local commercial banks, rural credit co-operatives and other financial institutions"</i>		
A.4.3.2. Is it evident and substantiated that this voluntary coordinated action would not be implemented in the absence of the PoA?	2, 35	Yes, it is evident through the CER transfer contract between Zhoukou New Energy Development Co.Ltd. and the stove users. As no mandatory law to force rural households to install biogas digesters for cooking purposes. Therefore, it is a voluntary action of Zhoukou New Energy Development Co., Ltd. to carry out the Programme.	CR	<input checked="" type="checkbox"/>
A.4.3.3. Is it evident and substantiated that in case the PoA implements a mandatory policy or regulation this would not be enforced otherwise?	2, 27, 28, 31	There are no mandatory policies or regulations in China enforcing replacement of fossil fuels stove.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.3.4. Is it evident and substantiated that in case the PoA implements a mandatory policy or regulation that is enforced the PoA will lead to a greater level of enforcement?	2, 27, 28, 31	Not Applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.4. Operational, management and monitoring plan for the programme of activities (PoA)				
A.4.4.1. Is there a clear and transparent description of the operational and management arrangements established by the coordinating/managing entity?	2, 7	<u>Corrective Action Request No.6.</u> Although the description of the operational and management arrangements established by the Zhoukou New Energy Development Co.Ltd. has been provided, further information on post-validation activities need to be indicated. <u>Clarification Request No. 16.</u> Project proponent need to clarify the full meaning of PCDM.	CAR CR	<input checked="" type="checkbox"/>

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A.4.4.2. Is there a record keeping system for each CPA under the PoA?	2,7	Yes, the Zhoukou New Energy Development Co.Ltd. as the managing entity would ensure that the record keeping system is done appropriately by the SSC-CPA investor. Project proponent need to refer above CR in section A.4.4.1	CR	<input checked="" type="checkbox"/>
A.4.4.3. Is there a system or procedure to avoid double accounting, i.e. to avoid that an included CPA under this PoA already is a registered CDM project or CPA in another PoA?	2,7	<u>Corrective Action Request No.7.</u> It is not transparently described in case any bio digester will be replaced during monitoring period then how the information would be updated in the records of the project activity.	CAR	<input checked="" type="checkbox"/>
A.4.4.4. Is there a system or procedure to detect whether a SSC-CPA to be included in the PoA is not a de-bundled component of another CPA or CDM project?	2	As per EB 47, Annex 32, paragraph 9, it is clearly explained that the CPA of PoA is exempted from performing de-bundling check.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.4.5. Are provisions in place to ensure that those operating the CPA are aware of and have agreed that their activity is being subscribed to the PoA?	2	Yes, the empanelment and agreement with Zhoukou New Energy Development Co.Ltd. ensures that those operating the CPA are aware of and have agreed that their activity is being subscribed to the PoA.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.4.6. Is there a monitoring plan for the PoA, including a description of the proposed statistically sound sampling methods or procedures to be used by the DOE for the verification?	2	<u>Clarification Request No. 17.</u> The sampling approach of the programme shall be in line with the latest UNFCCC guideline on sampling.	CR	<input checked="" type="checkbox"/>
A.4.4.7. In case the coordinating/managing entity opts for a verification method that does not use sampling but verifies each CPA, does the monitoring plan provide a transparent sys-	2	Project proponent need to refer CAR above given in section A.4.4.1	CAR	<input checked="" type="checkbox"/>

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tem to ensure that no double accounting occurs and that the status of verification can be determined any time for each CPA?				
A.4.5. Public funding of the small-scale project activity				
A.4.5.1. Is the information provided on public funding provided in compliance with the actual situation or planning as available by the project participants?	44	Clarification Request No. 18. Project proponent need to justify with supportive documents that no ODA has been diverted in this project activity	CR	<input checked="" type="checkbox"/>
A.4.5.2. Is all information provided consistent with the details given in remaining chapters of the PoA-DD (in particular annex 2)?	44	Project proponent need to refer CR above given in section A.4.5.1	CR	<input checked="" type="checkbox"/>
B. Duration of the programme of activities				
B.1. Starting date of the programme of activities				
B.1.1. Is the programme's starting date clearly defined and reasonable?	2,40, 41	Yes, the start date of the PoA has been defined as 1 st July 2007. Clarification Request No. 19. Project proponent need to clarify the source of the starting date with supportive documents.	CR	<input checked="" type="checkbox"/>

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B.2. Length of the programme of activities (PoA)				
B.2.1. Is the assumed length of the PoA clearly defined by the coordinating managing entity and reasonable (max 28 years)?	2	It is indicated that length of the PoA is 28 years.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
C. Environmental Analysis				
C.1. Definition of the level at which environmental analysis as per requirements of the CDM modalities and procedures is undertaken:				
C.1.1. Is it defined whether the environmental analysis takes place at PoA or CPA level?	2, 27, 28	Yes, it has been indicated that the environmental analysis takes place at PoA level.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
C.1.2. Is the choice whether the environmental analysis takes place at PoA or CPA level justified?	2, 27, 28	Yes, it has been appropriately justified.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
C.2. Documentation on the analysis of the environmental impacts of the PoA, including transboundary impacts:				
C.2.1. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been approved?	2, 27, 28	Clarification Request No. 20. Provide the environmental impact assessment report which was approved by Henan Zhoukou Environmental Protection Bureau for project activity.	CR	<input checked="" type="checkbox"/>
C.2.2. Has the analysis of the environmental impacts of the project activity been sufficiently described?	2, 27, 28	Yes, No negative impact has been identified from project activity	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
C.2.3. Will the project create any adverse environmental effects?	2,	Project is not expect to create any adverse environmental effects	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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	27, 28			
C.2.4. Were transboundary environmental impacts identified in the analysis?	2, 27, 28	Not Applicable.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
C.3. Project proponent need to state whether in accordance with the host Party laws/regulations, an environmental impact assessment is required for a typical CPA of the PoA:				
C.3.1. Have the identified environmental impacts been addressed in the project design sufficiently?	2	Not Applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
C.3.2. Does the project comply with environmental legislation in the host country?	2,31	Yes, this could be confirmed from the letter issued by the Energy office of the Zhoukou City, Henan province	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
C.3.3. Is, per host country laws/regulations, an environmental impact assessment necessary for a typical CPA?	2	Project proponent need to refer CR above given in section C.2.1.	CR	<input checked="" type="checkbox"/>
D. Stakeholders' comments				
D.1. Project proponent need to indicate the level at which local stakeholder comments are invited. Justify the choice:				
D.1.1. Is there a clear statement whether the stakeholder comments will be invited at PoA or CPA level?	2,5,6	Yes, it has been indicated that the stakeholder comments will be invited at PoA level.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.2. Is the choice justified in a clear and reasonable manner?	2,5,6	Yes, all rural households within physical boundary of the PoA has been invited for local stake holder consultation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.3. If the stakeholder comments will be invited at PoA level, is there sufficient informa-	2,5,6	<u>Corrective Action Request No.8.</u>	CAR	<input checked="" type="checkbox"/>

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tion provided, on how comments by local stakeholders were invited?		The date of the stakeholder consultation meeting needs to be mentioned in the POA DD. Further, submit the sample copies of the questionnaire (English translation) which was received from stakeholders along with their comments.		
D.1.4. If the stakeholder comments will be invited at PoA level, is there a summary of the contents?	2,5,6	Project proponent need to refer CAR above.	CAR	<input checked="" type="checkbox"/>
D.1.5. If the stakeholder comments will be invited at PoA level, is there sufficient information provided, on how due account was taken of any comments received?	2,5,6	Project proponent need to refer CAR above.	CAR	<input checked="" type="checkbox"/>
D.2. Brief description how comments by local stakeholders have been invited and compiled				
D.2.1. Have relevant stakeholders been consulted?	2,5,6	Yes, the relevant stakeholders have been consulted.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.2.2. Have appropriate media been used to invite comments by local stakeholders?	2,5,6	Yes, appropriate media has been used to invite comments by local stakeholders as indicated in the PoA-DD. The same will be verified during on-site visit.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.2.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	2,5,6	Clarification Request No. 21. It is not clear stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws? Clarify.	CR	<input checked="" type="checkbox"/>
D.2.4. Is the undertaken stakeholder process	2,5,6	Project proponent need to refer CR above.	CR	<input checked="" type="checkbox"/>

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that was carried out described in a complete and transparent manner?				
D.3. Summary of the comments received				
D.3.1. Is a summary of the received stakeholder comments provided?	2,5,6	Project proponent need to CR in section D.2.3..	CR	<input checked="" type="checkbox"/>
D.4. Report on how due account was taken of any comments received				
D.4.1. Has due account been taken of any stakeholder comments received?	2,5,6	Please CR in section D.2.3.	CR	<input checked="" type="checkbox"/>
E. Application of a baseline and monitoring methodology to a typical SSC-CPA				
E.1.Title and reference of the approved SSC baseline and monitoring methodology applied to SSC-CPA included in the PoA				
E.1.1.1.Are reference number, version number, and title of the baseline and monitoring methodology clearly indicated?	2,3	Yes, the methodology AMS I.C, Thermal energy production with or without electricity --- Version 19 - has been indicated. <u>Corrective Action Request No.9.</u> Project proponent need to update the project as per methodology of AMS I.C, version 19 as deadline for request for registration submission under version 18 of the AMS.I.C has now expired. Also, clarify why methodology of AMS-I.I. Ver. 3.0– “Biogas/biomass thermal applications for households/small users” has been added in the PoA-DD?	CAR	<input checked="" type="checkbox"/>
E.1.1.2.Is the applied version the most recent one and / or is this version still applicable?	2,3	Yes, the version used is the most recent one at the time of uploading the project for GSP.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.1.3.Is the applied SSC methodology approved by the board, for use in PoA?	2,3	Yes, the applied SSC methodology has been approved by the board, for use in PoA.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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E.2. Justification of the choice of the methodology and why it is applicable to a SSC-CPA												
E.2.1. Is the applied methodology considered the most appropriate one?	2,3	<u>Corrective Action Request No.10.</u> It is not clearly described under which of the applicable condition (paragraph 1 to 14 of the AMS. I. C. Version. 19) in the applied methodology is the relevant for project activity and why? Project proponent need to clarify.	CAR	☑								
Integrate the required amount of sub-checklists on the applicability criteria as given by the applied methodology and comment on at least every line answered with “No”; Replace blue text												
E.2.1.1. Criterion 1: This methodology comprises renewable energy technologies that supply users with thermal energy that displaces fossil fuels. These units include technologies such as solar thermal water heaters and dryers, solar cookers, energy derived from renewable biomass and other technologies that provide thermal energy that displaces fossil fuel.	2,3	<table><tr><th>Applicability checklist</th><th>Yes / No / NA</th></tr><tr><td>Criterion discussed in the PDD?</td><td>No</td></tr><tr><td>Compliance provable?</td><td>No</td></tr><tr><td>Compliance verified?</td><td>No</td></tr></table> <p>Project proponent need to refer CAR in section E.1.1 and E.2.1.</p> <u>Corrective Action Request No.11.</u> Please justify how operate lamp from biogas is eligible as per first eligibility criteria of the applied methodology as criteria allowing renewable energy technologies that supply users with thermal energy that displaces fossil fuels.	Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	No	Compliance provable?	No	Compliance verified?	No	CAR	☑
Applicability checklist	Yes / No / NA											
Criterion discussed in the PDD?	No											
Compliance provable?	No											
Compliance verified?	No											
E.2.1.1. Criterion 2: Biomass based cogeneration systems (consisting of steam generator (s) and steam turbine(s) that pro-	2,3	<table><tr><th>Applicability checklist</th><th>Yes / No / NA</th></tr><tr><td>Criterion discussed in the PDD?</td><td>No</td></tr><tr><td>Compliance provable?</td><td>No</td></tr></table>	Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	No	Compliance provable?	No	CAR	☑		
Applicability checklist	Yes / No / NA											
Criterion discussed in the PDD?	No											
Compliance provable?	No											

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duce heat and electricity is included. "Cogeneration" mean the simultaneous generation of thermal energy and electrical energy in process. For example the project activity that produces heat and power in separate element processes (for example, heat from a boiler and electricity from biogas engine) does not fit under the definition of cogeneration project. Project activities that produce heat and power in separate element processes (for example heat from a boiler and electricity from a biogas engine) do not fit under the definition of cogeneration project.		Compliance verified?	No		
		Project proponent need to refer CAR in section E.1.1 and E.2.1.			
E.2.1.2. Criterion 3: Emission reductions from a biomass cogeneration system can accrue from one of the following activities (a) Electricity supplied to a grid (b) Electricity and/or thermal energy (steam or heat) production for on-site consumption or for consumption by other facilities (c) Combination of (a) and (b)	2,3	Applicability checklist	Yes / No / NA	CAR	☑
		Criterion discussed in the PDD?	No		
		Compliance provable?	No		
		Compliance verified?	No		
		Project proponent need to refer CAR in section E.1.1 and E.2.1.			
E.2.1.3. Criterion 4: The total installed/rated thermal energy generation capacity of the project equipment is equal to or less than 45 MW thermal ² (see paragraph 6	2,3	Applicability checklist	Yes / No / NA	CAR	☑
		Criterion discussed in the PDD?	No		
		Compliance provable?	No		
		Compliance verified?	No		

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for the applicable limits for cogeneration project activities).		Project proponent need to refer CAR in section E.1.1 and E.2.1.										
E.2.1.4. Criterion 5: For co-fired systems, the total installed thermal energy generation capacity of the project equipment, when using both fossil and renewable fuel shall not exceed 45 MW thermal	2,3	<table><tr><td>Applicability checklist</td><td>Yes / No / NA</td></tr><tr><td>Criterion discussed in the PDD?</td><td>No</td></tr><tr><td>Compliance provable?</td><td>No</td></tr><tr><td>Compliance verified?</td><td>No</td></tr></table> <p>Project proponent need to refer CAR in section E.1.1 and E.2.1.</p>	Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	No	Compliance provable?	No	Compliance verified?	No	CAR	☑
Applicability checklist	Yes / No / NA											
Criterion discussed in the PDD?	No											
Compliance provable?	No											
Compliance verified?	No											
E.2.1.5. Criteria 6: The following capacity limits apply for biomass cogeneration units: (a) If the project activity includes emission reductions from both the thermal and electrical energy components, the total installed energy generation capacity (thermal and electrical) of the project equipment shall not exceed 45 MW thermal. For the purpose of calculating this capacity limit the conversion factor of 1:3 shall be used for converting electrical energy to thermal energy (i.e., for renewable project activities, the maximal limit of 15MW(e) is equivalent	2,3	<table><tr><td>Applicability checklist</td><td>Yes / No / NA</td></tr><tr><td>Criterion discussed in the PDD?</td><td>No</td></tr><tr><td>Compliance provable?</td><td>No</td></tr><tr><td>Compliance verified?</td><td>No</td></tr></table> <p>Project proponent need to refer CAR in section E.1.1 and E.2.1.</p>	Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	No	Compliance provable?	No	Compliance verified?	No	CAR	☑
Applicability checklist	Yes / No / NA											
Criterion discussed in the PDD?	No											
Compliance provable?	No											
Compliance verified?	No											

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<p>lent to 45 MW thermal output of the equipment or the plant).</p> <p>(b) If the emission reductions of the co-generation project activity are solely on account of thermal energy production (i.e. no emission reductions accrue from electricity component), the total installed thermal energy production capacity of the project equipment of the cogeneration unit shall not exceed 45 MW thermal.</p> <p>(c) If the emission reductions of the co-generation project activity are solely on account of electrical energy production (i.e. no emission reductions accrue from thermal energy component), the total installed electrical energy generation capacity of the project equipment of the cogeneration unit shall not exceed 15 MW.</p>													
E.2.1.6. Criteria 7: The capacity limits specified in the above paragraphs apply to both new facilities and retrofit projects. In the case of project activities that involve the addition of renewable energy units at an existing renewable energy	2,3	<table> <tr> <th>Applicability checklist</th> <th>Yes / No / NA</th> </tr> <tr> <td>Criterion discussed in the PDD?</td> <td>No</td> </tr> <tr> <td>Compliance provable?</td> <td>No</td> </tr> <tr> <td>Compliance verified?</td> <td>No</td> </tr> </table> <p><u>Clarification Request No. 22.</u></p>	Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	No	Compliance provable?	No	Compliance verified?	No		CAR CR	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No / NA												
Criterion discussed in the PDD?	No												
Compliance provable?	No												
Compliance verified?	No												

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facility, the total capacity of the units added by the project shall comply with capacity limits in paragraphs 4 to 6 and shall be physically distinct from the existing units.		Project proponent need to clarify how an eligibility criterion 7 of the methodology AMS.I.C, version.19 is not applicable here? Project proponent need to refer CAR in section E.1.1 and E.2.1.										
E.2.1.7.Criterion 8: Project activities that seek to retrofit or modify an existing facility for renewable energy generation are included in this category.	2,3	<table><tr><th>Applicability checklist</th><th>Yes / No / NA</th></tr><tr><td>Criterion discussed in the PDD?</td><td>No</td></tr><tr><td>Compliance provable?</td><td>No</td></tr><tr><td>Compliance verified?</td><td>No</td></tr></table> Project proponent need to refer CAR in section E.1.1 and E.2.1.	Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	No	Compliance provable?	No	Compliance verified?	No	CAR	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No / NA											
Criterion discussed in the PDD?	No											
Compliance provable?	No											
Compliance verified?	No											
E.2.1.8. Criterion 9: New Facilities (Greenfield projects) and project activities involving capacity additions compared to the baseline scenario are only eligible if they comply with the related and relevant requirements in the General Guidelines to SSC CDM methodologies.	2,3	<table><tr><th>Applicability checklist</th><th>Yes / No / NA</th></tr><tr><td>Criterion discussed in the PDD?</td><td>No</td></tr><tr><td>Compliance provable?</td><td>No</td></tr><tr><td>Compliance verified?</td><td>No</td></tr></table> Project proponent need to refer CAR in section E.1.1 and E.2.1.	Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	No	Compliance provable?	No	Compliance verified?	No	CAR	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No / NA											
Criterion discussed in the PDD?	No											
Compliance provable?	No											
Compliance verified?	No											
E.2.1.9. Criterion 10: If solid biomass fuel (e.g. briquette) is used, it shall be demonstrated that it has been produced using solely renewable biomass and all project or leakage emissions associated with its production shall be taken into account in emissions reduction calculation.	2,3	<table><tr><th>Applicability checklist</th><th>Yes / No / NA</th></tr><tr><td>Criterion discussed in the PDD?</td><td>No</td></tr><tr><td>Compliance provable?</td><td>No</td></tr><tr><td>Compliance verified?</td><td>No</td></tr></table> Project proponent need to refer CAR in section E.1.1 and E.2.1.	Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	No	Compliance provable?	No	Compliance verified?	No	CAR	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No / NA											
Criterion discussed in the PDD?	No											
Compliance provable?	No											
Compliance verified?	No											

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E.2.1.10. Criterion 11: Where the project participant is not the producer of the processed solid biomass fuel, the project participant and the producer are bound by a contract that shall enable the project participant to monitor the source of the renewable biomass to account for any emissions associated with solid biomass fuel production. Such a contract shall also ensure that there is no double-counting of emission reductions.	2,3	Applicability checklist	Yes / No / NA	CAR	<input checked="" type="checkbox"/>
		Criterion discussed in the PDD?	No		
		Compliance provable?	No		
		Compliance verified?	No		
		Project proponent need to refer CAR in section E.1.1 and E.2.1.			
E.2.1.11. Criterion 12: If electricity and/or steam/heat produced by the project activity is delivered to a third party i.e. another facility or facilities within the project boundary, a contract between the supplier and consumer(s) of the energy will have to be entered into that ensures there is no double-counting of emission reductions.	2,3	Applicability checklist	Yes / No / NA	CAR	<input checked="" type="checkbox"/>
		Criterion discussed in the PDD?	No		
		Compliance provable?	No		
		Compliance verified?	No		
		Project proponent need to refer CAR in section E.1.1 and E.2.1.			
E.2.1.12. Criterion 13: If the project activity recovers and utilizes biogas for power/heat production and applies this methodology on a stand alone basis i.e. without using a Type III component of a SSC methodology, any incremental emissions occurring due to the implementation of the project activity (e.g.	2,3	Applicability checklist	Yes / No / NA	CAR	<input checked="" type="checkbox"/>
		Criterion discussed in the PDD?	No		
		Compliance provable?	No		
		Compliance verified?	No		
		Project proponent need to refer CAR in section E.1.1 and E.2.1.			

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physical leakage of the anaerobic digester, emissions due to inefficiency of the flaring), shall be taken into account either as project or leakage emissions.												
<p>E.2.1.13. Criterion 14: Charcoal based biomass energy generation project activities are eligible to apply the methodology only if the charcoal is produced from renewable biomass sources, provided:</p> <p>(a) Charcoal is produced in kilns equipped with methane recovery and destruction facility; or</p> <p>(b) If charcoal is produced in kilns not equipped with a methane recovery and destruction facility, methane emissions from the production of charcoal shall be considered. These emissions shall be calculated as per the procedures defined in the approved methodology AMS-III.K. Alternatively, conservative emission factor values from peer reviewed literature or from a registered CDM project activity can be used, provided that it can be demonstrated that the parameters from these are comparable e.g., source of biomass, characteristics of biomass such as moisture, car-</p>	2,3	<table> <tr> <th>Applicability checklist</th> <th>Yes / No / NA</th> </tr> <tr> <td>Criterion discussed in the PDD?</td> <td>No</td> </tr> <tr> <td>Compliance provable?</td> <td>No</td> </tr> <tr> <td>Compliance verified?</td> <td>No</td> </tr> </table> <p>Project proponent need to refer CAR in section E.1.1 and E.2.1.</p>	Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	No	Compliance provable?	No	Compliance verified?	No	CAR	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No / NA											
Criterion discussed in the PDD?	No											
Compliance provable?	No											
Compliance verified?	No											

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bon content, type of kiln, operating conditions such as ambient temperature.				
E.3.Description of the sources and gases included in the SSC-CPA boundary				
E.3.1. Does the SSC-CPA boundary include the physical and geographical location where the project activities take place?	2,23, 25, 50	Clarification Request No. 23. Project boundary is biogas digesters and their attachments implemented in Zhoukou City, Henan Province. However, geographical information is needs to be clarified in boundary description given in the POA DD.	CR	<input checked="" type="checkbox"/>
E.3.2. Are all sources and gases within the boundary considered in a clear manner?	2,23	Clarification Request No. 24. In the table of section E.3, it is not transparently explained the sources and gases in baseline and project emission within the boundary.	CR	<input checked="" type="checkbox"/>
E.3.3. Do the spatial and technological boundaries as verified on-site comply with the discussion provided by / indication included to the PDD?	2,23	Project proponent need to refer CR above in section E.3.1. and E.3.2.	CR	<input checked="" type="checkbox"/>
E.4.Description of how the baseline scenario is identified and description of the identified baseline scenario:				
E.4.1. 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 pro-	2,48, 49, 50	Corrective Action Request No.12. Project proponent need to correct the description of the baseline scenario in accordance with the applied methodology.	CAR	<input checked="" type="checkbox"/>

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<p>ject activity times an emission factor for the fossil fuel displaced. For calculating the emission factor, reliable local or national data shall be used. IPCC default values shall be used only when country or project specific data are not available or demonstrably difficult to obtain.</p> <p>Is this the case in this project activity, and if yes, has this baseline been identified correctly? (For cogen projects, see E.4.3.)</p>				
<p>E.4.2. For fuel switching from fossil fuel to renewable biomass in existing facilities, historical information (detailed records) on the use of energy sources (e.g., electricity, fossil fuel) and the plant output (e.g., steam/electricity) in the baseline plant from at least 3 years prior to project implementation shall be used in the baseline calculations, For facilities that are less than 3 years old, all historical data shall be available (a minimum of one year data would be required). In case of project activity exporting to other facilities included in the project boundary, the above historical information from the recipient plants are required</p>	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>
<p>E.4.3. Cogeneration projects shall use one of the Eight options given in point 12 of AMS I.C.</p>	2,48, 49,	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>

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version 16 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?	50			
E.4.4. Baseline emissions for electricity produced in captive plants shall be calculated as per the procedure detailed in point 16 of AMS I.C. Version. 19.	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1..	CAR	<input checked="" type="checkbox"/>
E.4.5. In the case baseline emission is supply of electricity produced to and/or displacement electricity from a grid then it shall be calculated as per the procedure detailed in AMS.I.D.	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>
E.4.6. In case baseline emission is steam/heat produced using fossil fuels the baseline emissions then it shall be calculated as per the procedure detailed in point 19 of AMS I.C. Version. 19.	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>
E.4.7. For cases 15 (a), (b) and (c) of AMS I.C. Version. 16, baseline emissions shall be calculated as the sum of emissions from the production of electricity and steam/heat considering most recent historical records (average of the data from a minimum of three most recent years excluding abnormal years is required).	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>

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E.4.8. For electricity and thermal energy (steam/heat) produced in a cogeneration unit, using fossil fuel (case 12 (d)), it shall be calculated as per the procedure detailed in point 17 of AMS I.C. Version. 19.	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>
E.4.9. Efficiency of the baseline units shall be determined by adopting one of the following criteria mentioned in point 19 of AMS I.C. Version. 19.	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>
E.4.10. For household or commercial applications/systems, whose maximum output capacity is less than 45 kW thermal and where it can be demonstrated that the metering of thermal energy output is not plausible, as in the case of cooking stoves, gasifiers, driers, water heaters etc., efficiency of the baseline units shall be determined by adopting one of the following criteria: (a) Highest measured operational efficiency over the full range of operating conditions of a representative sample of units with similar specifications, using baseline fuel. The efficiency tests shall be conducted following the guidance provided in relevant national / international standards;	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>

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(b) Highest of the efficiency values provided by two or more manufacturers for units with similar specifications using the baseline fuel; (c) Highest efficiency from referenced literature values or default efficiency of 100%.				
E.4.11. For case 15 (e), baseline emissions from the production of electricity shall be calculated as per paragraph 19-22 of AMS I C version 19. Emission reductions from heat generation are not eligible.	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>
E.4.12. For case 15 (f), baseline emissions from the production of steam/heat using fossil fuel shall be calculated as per paragraph 17 of AMS I C version 19. Emission reductions from displacing on-site electricity generation are not eligible.	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>
E.4.13. For case 15 (g), baseline emissions from the production of electricity that displaces grid electricity import and/or supply electricity to the grid, shall be calculated as per paragraph 17 of AMS I C version 19. Emission reductions from both the generation of electricity and thermal energy (steam/heat) for on-site consumption are not eligible.	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>

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E.4.14. For 15 (h), baseline emissions shall be determined based on three years average historical data on the relative share of fossil fuel and biomass in the baseline fuel mix. The relative share is determined based on the energy content of each fuel and procedure detailed in point 31 of AMS I.C version. 19.	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>
E.4.15. In the case of project activities that involve 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. For project activities that involve the addition of new energy production units (e.g., turbines) at an existing facility, net increase in thermal energy generation shall be calculated as per detailed in point 24 of AMS I.C version.16.	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>
E.4.16. For project activities that seek to retrofit or modify energy generation the baseline	2,48, 49,	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>

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scenario shall as per the detailed in point 33 to 35 of the AMS I.C version.19.	50			
E.4.17. The requirements concerning demonstration of the remaining lifetime of the replaced equipment shall be met as described in the .General Guidelines to SSC CDM methodologies. If the remaining lifetime of the affected systems increases due to the project activity, the crediting period shall be limited to the estimated remaining lifetime, i.e. the time when the affected systems would have been replaced in the absence of the project activity	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>
E.4.18. In order to estimate the point in time when the existing equipment would need to be-replaced in the absence of the project activity (<i>BaselineRetrofit DATE</i>), project participants may follow the procedures described in the general guidelines	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>
E.4.19. For project activities that seek to retrofit or modify an existing facility for the purpose of fuel switch from fossil fuels to biomass residues in heat generation equipment, the baseline emissions shall be calculated as per equation 2	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>
E.4.20. For household or commercial applications/systems, whose maximum output capacity is less than 45 kW thermal and	2,48, 49,	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>

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where it can be demonstrated that the metering of thermal energy output is not plausible, as in the case of biomass stoves, gasifiers, driers, water heaters etc, the project output energy shall be estimated based on consumption of the biomass (in terms of energy quantity) times the efficiency of the project equipment as per the detailed in point 39 of the AMS I.C version.19	50			
E.4.21. In the case of project activity consuming biomass and fossil fuel to produce thermal and or electrical energy, specific energy consumption ¹¹ of each type of fuel (biomass or fossil) to be used shall be specified <i>ex ante</i> . The consumption of each type of fuel shall be monitored. Specific energy consumption can be derived as per the procedure defined in point 40 of AMS. I.C, version 19.	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>
E.4.22. For the co-fired systems, baseline emissions calculated as per paragraph 31 shall be compared with the baseline emissions calculated as per paragraph 41. The lower of the two values shall be used to calculate emission reductions	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>
E.4.23. Have all technically feasible baseline scenario alternatives to the project activity	2,48, 49,	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>

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been identified and discussed by the PDD? Why can this list be considered as being complete?	50			
E.4.24. Does project identify correctly and exclude those options not in line with regulatory or legal requirements?	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>
E.4.25. Have applicable regulatory or legal requirements been identified?	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>
E.4.26. Does the PDD identify the most likely baseline scenario in absence of the project activity?	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>
E.4.27. Is this identification supported by official and/or verifiable documents (e.g. studies, web pages, certificates, etc)?	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>
E.4.28. Is the identified baseline scenario in line with regulatory or legal requirements?	2,48, 49, 50	Project proponent need to refer CAR above given in section E.4.1.	CAR	<input checked="" type="checkbox"/>
E.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of a typical SSC-CPA, included in a registered PoA (assessment and demonstration of additionality):				
E.5.1. Are the key criteria and data for assessing additionality of a SSC-CPA that is to be included into the PoA clearly and unambiguously stated?	2	<u>Corrective Action Request No.13.</u> It is not transparently described in the POA DD which tool and guidance has been referred to demonstrate the additionality of the project activity.	CAR	<input checked="" type="checkbox"/>

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E.5.2. Are the key criteria and data for assessing additionality of a SSC-CPA that is to be included into the PoA based on the additionality assessment in section E.5.1 of the PoA-DD?	2	Project proponent need to refer CAR above given in section E.5.1.	CAR	☑									
E.5.3. Is the choice of the criteria justified, based on the analysis in section E.5.1 of the PoA-DD?	2	Project proponent need to refer CAR above given in section E.5.1.	CAR	☑									
E.5.4. Does it become evident how these criteria would be applied to assess the additional-ity of a typical CPA at the time of inclu-sion?	2	Project proponent need to refer CAR above given in section E.5.1.	CAR	☑									
E.5.5. Is this information incorporated into the specific CDM-SSC-CPA-DD (“real case”)?	2	Project proponent need to refer CAR above given in section E.5.1.	CAR	☑									
E.5.6. 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 deci-sion to proceed with the project activity?	2	<u>Clarification Request No. 25.</u> Project proponent need to provide evidence (English translation) to prove that incentive from the CDM was seriously considered in the decision to proceed with the PoA.	CR	☑									
E.5.7. Is a complete list of barriers developed that prevents the project activity to occur?	2	Project proponent need to refer CAR above given in section E.5.1.	CAR	☑									
E.5.8. Does this list include at least one of the following barriers?	2	<table><tr><th>Barrier</th><th>Discussed?</th><th>Verifiable?</th></tr><tr><td>Investment</td><td>Yes</td><td>No</td></tr><tr><td>Technological</td><td>Yes</td><td>No</td></tr></table>	Barrier	Discussed?	Verifiable?	Investment	Yes	No	Technological	Yes	No	CAR	☑
Barrier	Discussed?	Verifiable?											
Investment	Yes	No											
Technological	Yes	No											

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		<table><tr><td>Due to prevailing practice</td><td>Yes</td><td>No</td></tr><tr><td>Other</td><td>Yes</td><td>No</td></tr></table>			Due to prevailing practice	Yes	No	Other	Yes	No		
Due to prevailing practice	Yes	No										
Other	Yes	No										
		Project proponent need to refer CAR above given in section E.5.1.										
E.5.9. Does the discussion sufficiently take into account relevant national and/or sectoral policies?	2	Project proponent need to refer CAR above given in section E.5.1.			CAR	☑						
E.5.10. Is transparent and documented evidence provided on the existence and significance of these barriers?	2	Project proponent need to refer CAR above given in section E.5.1.			CAR	☑						
E.5.11. Is it appropriately explained how the approval of the project activity will help to overcome the identified barriers?	2	Project proponent need to refer CAR above given in section E.5.1.			CAR	☑						
E.6.Estimation of Emission reductions of a CPA												
Integrate questions concerning methodological choices and selection of options, if necessary												
E.6.1. Explanation of methodological choices, provided in the approved baseline and monitoring methodology applied, selected for a typical CPA												
E.6.1.1.Is it explained how the procedures provided in the methodology are applied by the proposed SSC-CPA?	2,3	<u>Clarification Request No. 26.</u> Project proponent need to provide the supportive to verify the gross generation capacity i.e. 16.08 MW _{th} mentioned in the section E.6.2 of the POA-DD Further, clarify what could have been the project fossil fuel in the absence of the project activity.			CR	☑						
E.6.1.2.Is every selection of options offered by the methodology correctly justified and	2,3	<u>Clarification Request No. 27.</u> Project proponent need to clarify what option of applied methodology			CR	☑						

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is this justification in line with the situation verified on-site?		would be used to determine the quantity of coal in base case of the project activity?		
E.6.2. Equations, including fixed parametric values, to be used for calculation of emission reductions of a SSC-CPA:				
E.6.2.1.Are the formulae required for the determination of baseline emissions correctly presented, enabling a complete identification of parameters to be used and / or monitored? Note: if fossil fuel is used, the thermal energy or the electricity generation metered shall be adjusted to deduct the thermal energy or electricity generation from fossil fuels using the specific fuel consumption and the quantity of fossil fuel consumed.	2,3	<u>Corrective Action Request No.14.</u> It is not transparently described which baseline scenarios (from paragraph 16 to 45 of AMS I C, version. 19) of the applied methodology have been chosen for project activity. Project proponent need to identified the correct baseline scenario in the project activity and demonstrate accordingly.	CAR	<input checked="" type="checkbox"/>
E.6.2.2.Are the formulae required for the determination of project emissions correctly presented, enabling a complete identification of parameters to be used and / or monitored?	2,3	Project proponent need to refer CAR above given in section E.6.2.1	CAR	<input checked="" type="checkbox"/>
E.6.2.3.Are the formulae required for the determination of leakage emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	2,3	Project proponent need to refer CAR above given in section E.6.2.1	CAR	<input checked="" type="checkbox"/>
E.6.2.4.Are the formulae required for the determination of emission reductions cor-	2,3	Project proponent need to refer CAR above given in section E.6.2.1	CAR	<input checked="" type="checkbox"/>

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rectly presented? Note: Does the PDD mention that the lower of the two values mentioned in paragraph 36 of the methodology will be used to calculate emission reductions?																						
E.6.3. Data and parameters that are to be reported in CDM-SSC-CPA-DD form																						
E.6.3.1.Are the equations, including fixed parametric values, to be used for calculation of emission reductions of a SSC-CPA, completely presented?	2,3	No, the list of parameters presented is not complete. Project proponent need to refer to CARs and CRs below. <u>Corrective Action Request No.15.</u> Project proponent need to fix the parameter values which required as per the applied methodology for replacement of the fossil fuels cooking system with biogas digester based cooking system.	CAR	<input checked="" type="checkbox"/>																		
E.6.3.2.Comment on any line answered with “No”																						
E.6.3.2.1. Parameter Title: EFCO2 the CO2 emission factor per unit of coal/LPG that would have been used in the baseline plant in (tCO2 / TJ), obtained from reliable local or national data if available, otherwise, IPCC default emission factors are used.	2,3	<table><tr><th>Data Checklist</th><th>Yes / No / NA</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>No</td></tr><tr><td>Appropriate description of parameter?</td><td>No</td></tr><tr><td>Source clearly referenced?</td><td>No</td></tr><tr><td>Correct value provided?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Choice of data correctly justified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>No</td></tr></table>	Data Checklist	Yes / No / NA	Title in line with methodology?	No	Data unit correctly expressed?	No	Appropriate description of parameter?	No	Source clearly referenced?	No	Correct value provided?	No	Has this value been verified?	No	Choice of data correctly justified?	No	Measurement method correctly described?	No	CAR	<input checked="" type="checkbox"/>
Data Checklist	Yes / No / NA																					
Title in line with methodology?	No																					
Data unit correctly expressed?	No																					
Appropriate description of parameter?	No																					
Source clearly referenced?	No																					
Correct value provided?	No																					
Has this value been verified?	No																					
Choice of data correctly justified?	No																					
Measurement method correctly described?	No																					

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		Project proponent need to refer above CAR given in section E.6.3.1																				
E.6.3.2.2. Parameter Title: the highest operational efficiency of the baseline units (LPG/Coal)	2,3	<table><tr><th>Data Checklist</th><th>Yes / No / NA</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>No</td></tr><tr><td>Appropriate description of parameter?</td><td>No</td></tr><tr><td>Source clearly referenced?</td><td>No</td></tr><tr><td>Correct value provided?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Choice of data correctly justified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>No</td></tr></table> <p><u>Corrective Action Request No.16.</u></p> <p>Project proponent need to include the parameter indicating the highest operation efficiency baseline units which shall be determined as per AMS I C version 19.</p>	Data Checklist	Yes / No / NA	Title in line with methodology?	No	Data unit correctly expressed?	No	Appropriate description of parameter?	No	Source clearly referenced?	No	Correct value provided?	No	Has this value been verified?	No	Choice of data correctly justified?	No	Measurement method correctly described?	No	CAR	☑
Data Checklist	Yes / No / NA																					
Title in line with methodology?	No																					
Data unit correctly expressed?	No																					
Appropriate description of parameter?	No																					
Source clearly referenced?	No																					
Correct value provided?	No																					
Has this value been verified?	No																					
Choice of data correctly justified?	No																					
Measurement method correctly described?	No																					
E.6.3.2.3. Parameter Title: CO ₂ emission factor per unit of fuel i	2,3	<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>No</td></tr><tr><td>Correct value provided?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Choice of data correctly justified?</td><td>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?	No	Correct value provided?	No	Has this value been verified?	No	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	CAR	☑
Data Checklist	Yes / No / NA																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	No																					
Correct value provided?	No																					
Has this value been verified?	No																					
Choice of data correctly justified?	Yes																					
Measurement method correctly described?	Yes																					

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		Project proponent need to refer above CAR given in section E.6.3.1																				
E.6.3.2.4. Parameter Title: Net calorific value (NCV _i)	2,3	<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>No</td></tr><tr><td>Correct value provided?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Choice of data correctly justified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>No</td></tr></table> Project proponent need to refer above CAR given in section E.6.3.1	Data Checklist	Yes / No / NA	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	No	Correct value provided?	No	Has this value been verified?	No	Choice of data correctly justified?	No	Measurement method correctly described?	No	CAR	☑
Data Checklist	Yes / No / NA																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	No																					
Correct value provided?	No																					
Has this value been verified?	No																					
Choice of data correctly justified?	No																					
Measurement method correctly described?	No																					
E.6.3.2.5. Global Warming Potential of methane	2,3	<table><tr><th>Data Checklist</th><th>Yes / No / NA</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>No</td></tr><tr><td>Appropriate description of parameter?</td><td>No</td></tr><tr><td>Source clearly referenced?</td><td>No</td></tr><tr><td>Correct value provided?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Choice of data correctly justified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>No</td></tr></table> Project proponent need to refer above CAR given in section E.6.3.1	Data Checklist	Yes / No / NA	Title in line with methodology?	No	Data unit correctly expressed?	No	Appropriate description of parameter?	No	Source clearly referenced?	No	Correct value provided?	No	Has this value been verified?	No	Choice of data correctly justified?	No	Measurement method correctly described?	No	CAR	☑
Data Checklist	Yes / No / NA																					
Title in line with methodology?	No																					
Data unit correctly expressed?	No																					
Appropriate description of parameter?	No																					
Source clearly referenced?	No																					
Correct value provided?	No																					
Has this value been verified?	No																					
Choice of data correctly justified?	No																					
Measurement method correctly described?	No																					
E.6.3.2.6. Methane density	2,3		CAR	☑																		

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		<table><tr><th>Data Checklist</th><th>Yes / No / NA</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>No</td></tr><tr><td>Appropriate description of parameter?</td><td>No</td></tr><tr><td>Source clearly referenced?</td><td>No</td></tr><tr><td>Correct value provided?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Choice of data correctly justified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>No</td></tr></table>	Data Checklist	Yes / No / NA	Title in line with methodology?	No	Data unit correctly expressed?	No	Appropriate description of parameter?	No	Source clearly referenced?	No	Correct value provided?	No	Has this value been verified?	No	Choice of data correctly justified?	No	Measurement method correctly described?	No			
Data Checklist	Yes / No / NA																						
Title in line with methodology?	No																						
Data unit correctly expressed?	No																						
Appropriate description of parameter?	No																						
Source clearly referenced?	No																						
Correct value provided?	No																						
Has this value been verified?	No																						
Choice of data correctly justified?	No																						
Measurement method correctly described?	No																						
		Project proponent need to refer above CAR given in section E.6.3.1																					
E.6.3.2.7. Fraction of methane in the bio-gas	2,3	<table><tr><th>Data Checklist</th><th>Yes / No / NA</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>No</td></tr><tr><td>Appropriate description of parameter?</td><td>No</td></tr><tr><td>Source clearly referenced?</td><td>No</td></tr><tr><td>Correct value provided?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Choice of data correctly justified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>No</td></tr></table>	Data Checklist	Yes / No / NA	Title in line with methodology?	No	Data unit correctly expressed?	No	Appropriate description of parameter?	No	Source clearly referenced?	No	Correct value provided?	No	Has this value been verified?	No	Choice of data correctly justified?	No	Measurement method correctly described?	No		CAR	<input checked="" type="checkbox"/>
Data Checklist	Yes / No / NA																						
Title in line with methodology?	No																						
Data unit correctly expressed?	No																						
Appropriate description of parameter?	No																						
Source clearly referenced?	No																						
Correct value provided?	No																						
Has this value been verified?	No																						
Choice of data correctly justified?	No																						
Measurement method correctly described?	No																						
		Project proponent need to refer above CAR given in section E.6.3.1																					
Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/entity(ies)																							

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E.7. Application of the monitoring methodology and description of the monitoring plan					
E.7.1. Data and parameters to be monitored by each SSC-CPA					
E.7.1.1.Is the list of parameters presented in chapter B.7.1 considered to be complete with regard to the requirements of the applied methodology?	2,3	No, list of the parameters presented is not complete. Project proponent need to CARs and CRs below. <u>Corrective Action Request No.17.</u> Project proponent need to include all monitoring parameters required as per the applied methodology AMS. I. C, version 19. Also, refer CAR comment given in section E.1.1.1.	CAR	☑	
E.7.1.2. Continuous operation of the equipment/system	2,3	Monitoring Checklist	Yes / No/NA	CAR	☑
		Title in line with methodology?	Yes		
		Data unit correctly expressed?	NA		
		Appropriate description of parameter?	Yes		
		Source clearly referenced?	Yes		
		Correct value provided for estimation?	NA		
		Has this value been verified?	NA		
		Measurement method correctly described?	NA		
		Correct reference to standards?	NA		
		Indication of accuracy provided?	NA		
		QA/QC procedures described?	Yes		
		QA/QC procedures appropriate?	Yes		
		Project proponent need to refer above CAR given in section E.7.1.1			
E.7.1.3.Fraction of households using coal or LPG as the main fuel for cooking in the baseline scenario	2,3	Monitoring Checklist	Yes / No/NA	CAR	☑
		Title in line with methodology?	Yes		
		Data unit correctly expressed?	NA		
		Appropriate description of parameter?	Yes		

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		Source clearly referenced?	Yes		
		Correct value provided for estimation?	NA		
		Has this value been verified?	NA		
		Measurement method correctly described?	NA		
		Correct reference to standards?	NA		
		Indication of accuracy provided?	NA		
		QA/QC procedures described?	Yes		
		QA/QC procedures appropriate?	Yes		
		Project proponent need to refer above CAR given in section E.7.1.1			
E.7.1.4. Number of registered biogas units of the size k commissioned	2,3	Monitoring Checklist	Yes / No/NA	CAR	<input checked="" type="checkbox"/>
		Title in line with methodology?	Yes		
		Data unit correctly expressed?	NA		
		Appropriate description of parameter?	Yes		
		Source clearly referenced?	Yes		
		Correct value provided for estimation?	NA		
		Has this value been verified?	NA		
		Measurement method correctly described?	NA		
		Correct reference to standards?	NA		
		Indication of accuracy provided?	NA		
		QA/QC procedures described?	Yes		
		QA/QC procedures appropriate?	Yes		
		Project proponent need to refer above CAR given in section E.7.1.1			
E.7.1.5. Proportion of N k,0 that remain operating at year y (fraction)	2,3	Monitoring Checklist	Yes / No	CAR	<input checked="" type="checkbox"/>
		Title in line with methodology?	No		
		Data unit correctly expressed?	No		
		Appropriate description of parameter?	No		

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		Source clearly referenced?	No		
		Correct value provided for estimation?	No		
		Has this value been verified?	No		
		Measurement method correctly described?	No		
		Correct reference to standards?	No		
		Indication of accuracy provided?	No		
		QA/QC procedures described?	No		
		QA/QC procedures appropriate?	No		
		Project proponent need to refer CAR in above			
E.7.1.6. Net quantity of biogas supplied to the thermal energy equipment for one typical biogas unit	2,3	Monitoring Checklist	Yes / No	CAR	☑
		Title in line with methodology?	No		
		Data unit correctly expressed?	No		
		Appropriate description of parameter?	No		
		Source clearly referenced?	No		
		Correct value provided for estimation?	No		
		Has this value been verified?	No		
		Measurement method correctly described?	No		
		Correct reference to standards?	No		
		Indication of accuracy provided?	No		
		QA/QC procedures described?	No		
		QA/QC procedures appropriate?	No		
		Project proponent need to refer above CAR given in section E.7.1.1			
E.7.2. Description of the monitoring plan for a SSC-CPA					
E.7.2.1.Is the operational and management structure clearly described and in compliance with the envisioned situation?	2,7	Yes, the operational and management structure has been defined in the PoA-DD. However, <u>Clarification Request No. 28.</u>		CR	☑

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		<p>Project proponent need to provide the operation and control manual of the POA project.</p> <p><u>Clarification Request No. 29.</u></p> <p>Project proponent need to clarify how the management system of this PoA fully comply with the requirements of Annex 5 of EB70</p> <p><u>Clarification Request No. 30.</u></p> <p>The following points are observed in the sampling approach of the programme given in section A.4.2.of the PoA-DD:</p> <p>(a) In description of the “Objectives and reliability requirements” under Sampling Design (A), Identification of the sampling requirements (requirement for methodology or guideline, if it is guideline then which para of the guideline) is not clear. Also, how 90/10 confidence/precision chosen for programme is in line with Standard for sampling and surveys for CDM Project activities and programme of activities Ver. 03.0.</p> <p>(b) In description of the “Target population” under Sampling Design (A) “The target population is all registered biogas units”. However, according to the CPA inclusion criteria of the POA-DD, target group is household biogas digester. Why information is not same? Clarify.</p> <p>(c) Why simple random sampling is appropriate for the programme and how simple random sampling will be calculated is not clearly defined under sampling method description of Sampling Design (A).</p> <p>(d) In description of the” Sampling Frame” population under Sampling Design (A), it is not clear to DOE from where sampling frame information will be taken such as CPA database etc. How primary</p>		

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		<p>data information will be collected from household such as acceptance certificate or similar documents? How Sampling frame information and data will be maintained (softcopy/hardcopy) and who will be responsible person to monitor these activity?</p> <p>All above information shall be clarified in Sampling frame population section.</p> <p>(e) In description of the “sampling requirements” under Sampling Design (A), it is stated “According to the project planner’s experience, the rate of biogas units still operational is higher than 95%”. However, how project planners got this experience or what is the background of this experience (eg. survey or pilot study) shall be clarified in this section.</p> <p>It is also stated that “local government’s requirement that the operation rate of biogas units is must be not lower than 95%”. Project proponent will provide supportive to verify this statement.</p> <p>(f) Source or guideline reference of the sampling calculation formula mentioned in the PoA-DD is not clear.</p> <p>(g) According to para 18 of Annex4, EB 69, field measurement procedure shall be indicated as per “Guidelines for sampling and surveys for CDM project activities and programme of activities” (Version.02)</p> <p>(h) “QA/QC” description given under Data to be collected (B) is not as per para 34 of “Guidelines for sampling and surveys for CDM project activities and programme of activities” (Version.02).</p> <p>(i) How sampling data will be used? It shall be clarified in “Analysis” of Data to be collected (B).</p> <p>(j) Under “Implementation plan” of Data to be collected (B), a gen-</p>		

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		<p>eral description of qualification and experience of personal who will be engaged shall be clarified as per requirements of the para 36 of "Guidelines for sampling and surveys for CDM project activities and programme of activities" (Version.02).</p> <p><u>Clarification Request No. 31.</u></p> <p>According to the CPA eligibility condition (f) in section A.4.2.2. of the PoA-DD, 13.800 households can participate per CPA (reason behind is that a re-calculation shows that with a rated capacity of the biogas stove (applied in the PoA) of 3,26 kW to keep the 45MWth threshold for thermal energy in SSC this is the maximum possible number that the programme is able to run under small scale). However, as per list of CPA's submitted to UNFCCC, there are some CPAs with more than 15,000 households. Clarify the reason.</p> <p><u>Clarification Request No. 32.</u></p> <p>How expected proportion value of the sampling calculation has been changed in the version 09 of the PoA-DD from version 08? Clarify this point.</p>		
E.7.2.2.Are responsibilities and institutional arrangements for data collection and archiving clearly provided?	2,7	Yes, it has been indicated.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.7.2.3.Does the monitoring plan provide current good monitoring practice?	2,7	Project proponent need to refer CR in section E.7.2.1	CR	<input checked="" type="checkbox"/>
E.7.2.4.If applicable: Does annex 4 provide useful information enabling a better understanding of the envisioned monitoring provisions?	2,7	No additional information on monitoring has been stated in Annex-04.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
E.8.Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/entity(ies)				
E.8.1.1.Is there any indication of a date when the baseline was determined?	2	Yes, the date has been given as 25 th October 2011.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.8.1.2.Has dd/mm/yyyy format been used to indicate the date.	2	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.8.1.3.Is this consistent with the time line of the PDD history?	2	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.8.1.4.Is the information on the person(s) / entity (ies) responsible for the application of the baseline and monitoring methodology provided consistent with the actual situation?	2	Yes, the information has been provided in the PoA-DD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.8.1.5.Is information provided whether this person / entity is also considered a project participant?	2	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F. Annexes 1 – 4				
F.1.Annex 1: Contact Information				
F.1.1. Is the information provided consistent with the one given under section A.3?	2	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.1.2. Is the information on all private participants and directly involved Parties presented?	2	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
F.2. Annex 2: Information regarding public funding				
F.2.1. Is the information provided on the inclusion of public funding (if any) in consistency with the actual situation presented by the project participants?	2	Yes	<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?	2	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.3. Annex 3: Baseline information				
F.3.1. If additional background information on baseline data is provided: Is this information consistent with data presented by other sections of the PDD?	2	No additional information has been presented in Annex-3 of the PoA-DD.	<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?	2	See section F.3.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.3.3. Does the additional information substantiate / support statements given in other sections of the PDD?	2	See section F.3.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.4. Annex 4: Monitoring information				
F.4.1. If additional background information on monitoring is provided: Is this information consistent with data presented in other sections of the PDD?	2	No additional information on monitoring has been presented in Annex-4 of the PoA-DD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
F.4.2. Is the information provided verifiable? Has sufficient evidence been provided to the validation team?	2	See section F.4.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.4.3. Do the additional information and / or documented procedures substantiate / support statements given in other sections of the PDD?	2	See section F.4.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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Table 2 Resolution of Corrective Action and Clarification Requests

Clarifications and corrective action re-quests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
<p><u>Corrective Action Request No.1.</u></p> <p>Project proponent need to define clearly the geographical area of the boundary, as of para 142 of CDM project standard.</p>	A.4.1.1	As per paragraph 142 of CDM project standard (Ver. 01.0), the boundary of the Programme is defined in terms of a geographical area within which all CPAs to be included in the Programme will be implemented. The Programme and all CPAs to be included in the Programme are implemented in Zhoukou City and all applicable local policies and regulations concerned are same in Zhoukou City for identification of baseline, so the geographical boundary of the whole Zhoukou administrative area delineates the boundary of the Programme.	<p>According to the requirement of para 142 of CDM project standard, coordinating/managing entity has defined Zhoukou city is the boundary of the PoA and also considered all applicable national and/or sectoral policies and regulations within the chosen boundary has reflected in the establishment of the baseline. This has been confirmed by DOE with letter of Approval (LOA) letter issued by National Development and Reform Commission of the Republic of China. This issue is now resolved.</p> <p>[IRL# 9, 56]</p> <p><input checked="" type="checkbox"/></p>
<p><u>Corrective Action Request No.2.</u></p> <p>It has been indicated in section A.2 of the PDD that there are no mandatory law to force rural households to setup biogas digesters in P.R.</p>	A.4.1.2	Please see the attached document, "Demonstration regarding rural household cooking fuel in ZhoukouCity, Henan Province ", which indicates that such mandatory law to force people use biogas as fuel does not exist in	<p>Project proponent has submitted confirmation letter from the Agriculture Bureau of Zhoukou City, Henan province which confirms that no</p>

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China. Project proponent need to provide the supportive (English version) to verify the statement.		China.	law/regulation is required to mandate the replacement of fossil fuels stove or construction or installation of biogas digesters in the region This issue is now resolved. [IRL# 31] <input checked="" type="checkbox"/>
<u>Corrective Action Request No.3.</u> Project need to include the all eligibility criteria for inclusion of the each CPA in the PoA as per “Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for PoA” (Ver. 01.0),	A.4.1.2.	PoA-DD has been updated.	All eligibility criteria for inclusion of the each CPA in the PoA has been included as per “Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for PoA” (Ver. 01.0) in the revised PoA-DD, [IRL# 56, 58] <input checked="" type="checkbox"/>
<u>Corrective Action Request No.4.</u> Project proponent need to indicate the type and category in section A.4.2.1 of the PoA-DD.	A.4.2.3.	The type and category have been supplemented in section A4.2.1 of the PoA-DD.	The type and category has been added throughout the PoA-DD. This issue is now resolved. [IRL# 56] <input checked="" type="checkbox"/>
<u>Corrective Action Request No.5.</u> Project proponent need to indicate whether the	A.4.2.6.	The project activity does not require any technology transfer from Annex-I countries to the host country. The	It has been understood from the feasibility study report

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implementation of the project activity require any technology transfer from Annex-I-countries to the host country.		evidence has been provided to DOE.	and stove manufacturer supportive that all raw materials are purchased from the local market and digesters are constructed on-site, while the biogas stoves are manufactured by a domestic supplier. No technology has been transferred from Annex-I-countries to the host country for this program. This issue is now resolved. [IRL# 23,25, 38] <input checked="" type="checkbox"/>
<u>Corrective Action Request No.6.</u> Although the description of the operational and management arrangements established by the Zhoukou New Energy Development Co.Ltd.has been provided, further information on post-validation activities need to be indicated.	A.4.4.1	The full section A.4.4.1 has been rewritten to properly describe the activities undertaken at each stage of the programme including the operational (post-validation) stage. The description about storage places and ways for the project documents has also been elaborated in Section A. 4.4.1.	Project proponent has been submitted operation and maintenance manual of the program and revised the operational and management description of the program accordingly in the revised PoA-DD. This issue is now resolved. [IRL# 7, 56] <input checked="" type="checkbox"/>
<u>Corrective Action Request No.7.</u> It is not transparently described in case any bio digester will be replaced during monitoring period then how the information would be updated in the	A.4.4.3.	- A unique ID number will be used for each digester - Each of the units installed is registered in the database under this unique ID. Each CPA under the PoA will have an individual database with the following in-	Project proponent has been incorporated detail procedure in the revised PoA DD on how records will be updated

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records of the project activity.		<p>formation:</p> <ul style="list-style-type: none"> - Name and address of the households where biogas units were installed under the CPA; - Date of commissioning; -Unique biogas plant registration number. <p>All biogas plants registered in one CPA will be uniquely defined and recorded, thus each CPA is uniquely identified. The coordinating/managing entity will ensure that any biogas units in a new CPA have neither already been registered as a CDM project, nor as a CPA of another PoA. Therefore double counting will be avoided. POA DD has been revised accordingly</p>	<p>during the replacement of the stoves.</p> <p>This issue is now resolved.</p> <p>[IRL# 7, 56]</p> <p><input checked="" type="checkbox"/></p>
<p><u>Corrective Action Request No.8.</u></p> <p>The date of the stakeholder consultation meeting needs to be mentioned in the POA DD.</p> <p>Further, submit the sample copies of the questionnaire (English translation) which was received from stakeholders along with their comments.</p>	D.1.3.	<p>The Poa DD has been amended to include the date of the stakeholder consultation meeting.</p> <p>A notification and sample of the questionnaires completed by the stakeholders is submitted along with this document.</p>	<p>The date of the stakeholder meeting has now been clarified in the revised PoA-DD and same has been verified with notification and CDM questionnaires of the stakeholder meeting.</p> <p>This issue is now resolved.</p> <p>[IRL# 5,6,7 and 56]</p> <p><input checked="" type="checkbox"/></p>
<p><u>Corrective Action Request No.9.</u></p> <p>Project proponent need to update the project as per methodology of AMS I.C, version 19 as deadline for request for registration submission under version 18 of the AMS.I.C has now expired.</p>	E.1.1.1	<p>Project proponent has been updated project as per methodology of AMS I.C, version 19 and also clarified the reason of the inclusion AMS-I.I. Ver. 3.0.</p>	<p>Project Proponent has been revised the project as per methodology of AMS I.C, version 19.</p> <p>Also, as it was not clear in</p>

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Also, clarify why methodology of AMS-I.I. Ver. 3.0– “Biogas/biomass thermal applications for households/small users” has been added in the PoA-DD?			the applied methodology AMS.I.C, version.19 that how monitoring will be done for net quantity of biogas supplied to the thermal energy equipment for one typical biogas unit. Project proponent was submitted a clarification request (see clarification no. 571) to meth panel on this point. In response, SSC WG has allowed to monitor the thermal energy according to the monitoring procedure defined in the methodology it is not clear in the applied methodology AMS.I.C, version.19 that how monitoring will be done for net quantity of biogas supplied to the thermal energy equipment for one typical biogas unit. Project proponent was submitted a clarification request (see clarification no. 571) to meth panel on this point. In response, SSC WG has allowed to monitor the thermal energy according to the monitoring procedure defined in the
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			<p>methodology AMS-I.I. Ver. 3.0 if applicability conditions of AMS-I.I are met.if applicability conditions of AMS-I.I are met.</p> <p>The above is the reason to inclusion of the AMS-I.I. Ver. 3.0 in the project.</p> <p>[IRL# 3,4 and 56]</p> <p><input checked="" type="checkbox"/></p>
<p><u>Corrective Action Request No.10.</u></p> <p>It is not clearly described under which of the applicable condition (paragraph 1 to 14 of the AMS. I. C. Version. 19) in the applied methodology is the relevant for project activity and why? Project proponent need to clarify.</p>	E.2.1.	The related description has been added in the updated PoA-DD.	<p>The applied methodology is applicable for the project and same has now been justified in the PoA DD.</p> <p>This issue is now resolved.</p> <p>[IRL# 3, 23 and 56]</p> <p><input checked="" type="checkbox"/></p>
<p><u>Corrective Action Request No.11.</u></p> <p>Please justify how lighting (illumination) from biogas is eligible as per first eligibility criteria of the applied methodology as criteria allowing renewable energy technologies that supply users with thermal energy that displaces fossil fuels.</p>	E.2.1	<p>As described in section A.4.2.1, the CDM Project Activities covered under this PoA employed renewable Energy technology i.e. household biogas to generate thermal Energy for cooking by users. In the absence of the household biogas technology, fossil fuel stoves would be used widely as baseline scenario.</p> <p>In some households of the Programme, biogas is expected to be used not only for cooking to displace the fossil fuel stoves, but also for illumination. Actually, the monitoring systems (i.e. biogas flow meters) are equipped installed at the inlet of the biogas cooking stoves and thus the amount of biogas used for illumina-</p>	<p>Project proponent has clarified that project will not consider the biogas which will be used for lighting purpose and the monitoring systems (i.e. biogas flow meters) will be installed at the inlet of the biogas cooking stoves so that amount of biogas which will be used in the cook stove will only be monitored and considered in the project. Light-</p>

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		tion will is not be count into excluded monitoring, this scenario of biogas for illumination is and not relevant to the Programme.	ing portion of the system has now been removed from the project boundary. DOE has agreed with above project proponent approach and it is now in line with first criteria of the applied methodology as biogas uses in the cook stove is replacing the fossil fuel stove. [IRL# 3, 4 and 56] <input checked="" type="checkbox"/>
<u>Corrective Action Request No.12.</u> Project proponent need to correct the description of the baseline scenario in accordance with the applied methodology.	E.4.1.	As per paragraph 13 of AMS.I.C Ver 19, the simplified baseline corresponds to the fuel consumption of the technologies that would have been used in the absence of the project activity times an emission factor for the fossil fuel displaced. The PoA DD has been amended accordingly.	Project proponent has justified the baseline of the project according to the applied methodology. Further, __PP had submitted Zhoukou City rural Energy Office certified letter which confirms that project proponent has done baseline study according to requirement of the CDM and applied methodology. This issue is now resolved.. [IRL# 3, 23, 47, 48, 49, 50 and 56] <input checked="" type="checkbox"/>
<u>Corrective Action Request No.13.</u>	E.5.1.	The additionality of the PoA is demonstrated using the	As per para 2 (c) of the "Guil-

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<p>It is not transparently described in the POA DD which tool and guidance has been referred to demonstrate the additionality of the project activity.</p>		<p>Guidelines on the demonstration of additionality of small-scale project activities (version 09.0)</p>	<p>elines of the demonstration of additionality of small-scale project activities", documentation of barriers is not required for the positive list of technologies and project types that are defined as automatically additional as programme is fulfilling the all criteria's of the 2 (c). This issue is now resolved. [IRL# 3, 56 and 66] <input checked="" type="checkbox"/></p>
<p><u>Corrective Action Request No.14.</u> It is not transparently described which baseline scenarios (from paragraph 16 to 43 of AMS I C, version. 19) of the applied methodology have been chosen for project activity. Project proponent need to be identified the correct baseline scenario in the project activity and demonstrate accordingly.</p>	<p>E.6.2.1.</p>	<p>The baseline scenario that corresponds to the scenario that prevailed prior to the implementation of the project activity is the scenario described in paragraph 16 of AMS.I.C. Version 19. Further, based on the approval of clarification by the small-scale working group on 10/10/2011 (number 571), the monitoring approach i.e. 5 campaigns chosen per digester size to monitor the amount of biogas supplied to thermal equipment will be employed in the project activity according to AMS. I.I. version 3. Please refer to the link:</p>	<p>Project proponent has described the baseline scenario of the project as per the applied methodology AMS.I.C, version.19. Further, net quantity of thermal energy supplied by the biogas equipment will be monitored according to AMS. I.I. version 3 as suggested by the small-scale working group on</p>

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		http://cdm.unfccc.int/Panels/ssc_wg/meetings/034/ssc_034_report.pdf	10/10/2011 against clarification number 571. This issue is now resolved. [IRL# 3,4, 23, 47, 48, 49, 50 and 56] <input checked="" type="checkbox"/>
<u>Corrective Action Request No.15.</u> Project proponent need to fix the parameter values which required as per the applied methodology for replacement of the fossil fuels cooking system with biogas digester based cooking system.	B.6.3.1	The related parameters has been added in the updated PoA-DD.	Ex-ante parameter which will be applied in CPA-DD's has now been included in the revised PoA-DD according to the applied methodology. This issue is now resolved. [IRL# 3,4 and 56] <input checked="" type="checkbox"/>
<u>Corrective Action Request No.16.</u> Project proponent need to include the parameter indicating the highest operation efficiency baseline units which shall be determined as per AMS I C version 19.	E.6.3.2.2	The efficiency of the coal-fired stoves to be replaced η_{th} is taken to be 47 % . This corresponds to the highest of the measured efficiency values of this type of coal burners. The data is based on the Chinese version of the Water Boiling Test in which the amount of heat energy transferred to a pot of water is compared to the amount in the fuel consumed. The used data is elaborated in the report: Edwards R, et al., 2004, Improved Household Stoves in China: An Assessment of the National Improved Stove Program (NISP) and article in Energy Policy 32 (2004) 395–411; Implications of changes in household stoves and fuel use in China. .	Parameter of the highest operation efficiency for both stoves has now been added in the revised PoA-DD. This issue is now resolved. [IRL# 3 and 56] <input checked="" type="checkbox"/>
<u>Corrective Action Request No.17.</u> Project proponent need to include all monitoring	E.7.1.1.	The following parameters have been added and de-	All monitoring parameters required as per the applied

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parameters required as per the applied methodology AMS. I. C, version 19.		<p>scribed in the sections of the PoA DD</p> <ul style="list-style-type: none"> • Number of biogas units of the size k commissioned($N_{k,0}$) • Proportion of biogas units that remain operating at year y ($n_{light,k,y}$) • The net quantity of biogas supplied to the thermal energy equipment for one typical biogas unit of the size k ($B_{biogas,k,y}$) • Proportion of biogas units that use a fraction of the biogas generated for illumination purposes ($n_{k,y}$) • Fraction of households using coal as the baseline fuel(f_{coal}) • Fraction of households using LPG as the baseline fuel(f_{LPG}) <p>Please refer to Section A.4.4.2., E.7.1. and E.7.2.of PoA DD.</p>	<p>methodology AMS. I. C, version 19 has now been added in the revised PoA-DD. [IRL# 3 and 56] <input checked="" type="checkbox"/></p>
<p>Clarification Request No. 1.</p> <p>Zhoukou Coal Industry Company was the coordinating/ managing entity before August 2008 and after August 2008, the coordinating/managing entity is Zhoukou New Energy Development Co.Ltd. It needs to be clarified in the POA DD how Zhoukou New Energy Development Co.Ltd. has received consent from Zhoukou Coal Indus-</p>	A.2.1.	<p>The information regarding how Zhoukou New Energy Development Co.Ltd. has received consent from Zhoukou Coal Industry Company to coordinating/managingthe biogas digester has been clarified in latest version PoA DD. Please refer to the footnote 1.The transfer contract will be provided to the DOE</p> <p>The information about the latest implementation status has been clarified in sectionA.2.and the table of “De-</p>	<p>Project proponent has submitted project transfer contract copy where it clearly demonstrates that Zhoukou Coal Company has given consent to Zhoukou New Energy Development Co.Ltd for coordinating and manag-</p>

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try Company to coordinating/managing the bio-gas digester before August 2008 (which was installed by Zhoukou Coal Industry Company) . Evidence of the contract agreement (English version) needs to be submitted to DOE. Further, information about the status of latest project implementation is needs to be clarified in the PoA DD.		tailed information about the Programme” in PoA DD.	ing the programme activity. Further, project proponent has updated the programme information in the revised PoA DD as per the latest implementation of the PoA. This issue is now resolved. [IRL# 37] <input checked="" type="checkbox"/>
<u>Clarification Request No. 2.</u> Project activity displaces traditional cooking system with biogas digester cooking system. However, it is understood that biogas will be used for lighting purpose also (Fig 3 of the PDD indicates lamp as well).Project proponent need to clarify.	A.2.1	The PoA DD has been revised accordingly.	Project proponent has removed the lighting system from the project boundary and updated the PoA-DD accordingly. Since lightning system is now not part of project boundary and programme therefore this issue can be closed . [IRL# 3,4] <input checked="" type="checkbox"/>
<u>Clarification Request No. 3.</u> Project activity replaces coal based cooking system with biogas based cooking system. However, some of the places in POA-DD mentioned project activity replacing the fossil fuel cooking system. This information shall be consistent throughout	A.2.1.	The goal of the Program is to implement biogas digesters in rural households in Zhoukou City, Henan Province, China in order to supply households with biogas for cooking displacing fossil fuels (i.e. coal or LPG) and therefore reducing greenhouse gas emissions.	Project activity replaces fossil fuels (i.e. coal and LPG) cooking system with biogas digester based cooking system. Same has been consistently clarified throughout PoA-DD.

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the PoA DD.			This issue is now resolved. [IRL# 2,23 and 56] <input checked="" type="checkbox"/>
Clarification Request No. 4. POA DD stated <i>“the main users of the Programme are rural households with medium and lower income in Zhoukou City”</i> . It needs to be further clarified with supportive (English version) how project proponent are identifying medium and lower income group? The procedure shall be in line with national policy.	A.2.4.	The additionality and inclusion criteria have been revised in the PoA DD and this condition is no longer relevant.	The statement has been deleted in the revised PoA-DD. Hence this issue is now resolved. [IRL# 56] <input checked="" type="checkbox"/>
Clarification Request No. 5. Provide the supportive (English version) to verify the statement <i>“2.96Kg coal is consumed every day”</i>	A.2.4.	-this parameter will not be applied in the revised PoA DD	The statement has been deleted in the revised PoA-DD hence this issue is now resolved. [IRL# 56] <input checked="" type="checkbox"/>
Clarification Request No. 6. It was observed during site visit that project activity displaces coal based traditional cooking system with biogas cooking system. It needs to be transparently clarified throughout the PoA DD.	A.2.5.	The goal of the Program is to implement biogas digesters in rural households in Zhoukou City, Henan Province, China in order to supply households with biogas for cooking displacing fossil fuels (i.e. coal or LPG) and therefore reducing greenhouse gas emissions.	Project activity displaces traditional fossil fuels (i.e. coal or LPG) cooking system with biogas cooking system. Same has now been clarified throughout PoA-DD. This issue is now resolved. [IRL# 23 and 56] <input checked="" type="checkbox"/>

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<p><u>Clarification Request No. 7.</u></p> <p>PoA DD stated “<i>There is no mandatory law to force rural households</i>”. PP need to clarified the reference document name or weblink (also submit English version) which can confirm this statement.</p>	A.2.5	<p>Please see the attacheddocument, “Demonstration regarding rural household cooking fuel in ZhoukouCity”. There it shows in China no such mandatory law to force people use biogas as fuel.</p>	<p>Project proponent has submitted confirmation letter from the Agriculture Bureau of Zhoukou City, Henan province which confirms that no law/regulation is required to mandate the construction or installation of biogas digesters in the region</p> <p>This issue is now resolved.</p> <p>[IRL# 31 and 56]</p> <p><input checked="" type="checkbox"/></p>
<p><u>Clarification Request No. 8.</u></p> <p>Project proponent need to provide the supportive (English version) to verify the technical flow description given in the section A.4.2.1 on bio digester process flow and technology.</p> <p>Further, it needs to be ensured that biogas digesters system design has been build according to the national standard.</p>	A.4.2.1	<p>Please see attached document : <i>Construction Standard of rural domestic biogas digester (农村沼气池建设标准)</i></p> <p>And a sample of Project Acceptance Certification will be supplied later confirm that all the system design is in line withthe national standard.</p> <p>Please see CPA-DD.</p>	<p>Project proponent has submitted <i>Construction Standard of rural domestic biogas digester</i> to verify the bio gas digester process and technology. Further, project Acceptance Certification which confirms that all the system design is in line with the national standard. This issue is now resolved.</p> <p>[IRL# 40 and 41]</p> <p><input checked="" type="checkbox"/></p>
<p><u>Clarification Request No. 9.</u></p> <p>During site audit it was observed that before installation of the biogas digesters some of the household was using LPG as fuel in their cooking</p>	A.4.2.2	<p>The PoA DD has been revised to allow households that have used either coal or LPG before the implementation of the PoA. The relevant parts, including emission reduction calculations, have been amended.</p>	<p>The Programme aims to displace fossil fuels (LPG and coal) which were traditionally used for cooking with renew-</p>

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system. However, as per PoA DD only those cooking stoves which were earlier using coal as a fuel in their cooking stoves would come under this project activity. It needs to be clarified how project activity has been removed LPG cooking stoves from the project activity.			able biogas thermal energy and same has been clarified throughout PoA-DD. The emission reduction of the program activity will be calculated accordingly. This issue is now resolved. [IRL# 2, 56] <input checked="" type="checkbox"/>
<u>Clarification Request No. 10.</u> Project proponent need to clarify how 16,000 biogas cooking stove users capacity is less than the thermal general capacity 45MW _{th} of the SSC criteria.	A.4.2.2.	The maximum number of biogas digesters that can be included in one CPA is 13,800. The rated capacity of a biogas stove of Xunda brand, which is the one used in the Program, is 3.26KW, so the total thermal capacity of 13,800 biogas digesters is 44.98MW _{th} , which is just below 45MW _{th} . In any case, any specific CPA will be examined carefully to avoid exceeding the applicable SSC thresholds. This number has been revised in the PoA-DD.	The rated capacity of each Xunda brand is 3.26KW. Since SSC threshold limit is 45MW _{th} therefore maximum 13,800 stove numbers could be used in each CPA of the project activity. Same has now been corrected in the revised PoA DD. This issue is now resolved. [IRL# 25] <input checked="" type="checkbox"/>
<u>Clarification Request No. 11.</u> Project proponent need to clarify about the possibility of replacement of the biogas cooking stoves under the PoA by other or more efficient technologies within the project period.	A.4.2.9	More efficient technology is unnecessary because the biogas generated by a biogas digester in the Program can be enough to meet thermal requirement for cooking. However, if it is found during the Program life-time that a household no longer is using the original biogas digester or has changed technology, this household will	Project proponent has been incorporated in the PoA-DD This issue is now resolved. [IRL# 56] <input checked="" type="checkbox"/>

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		be removed from the CPA.	
		Detailed description has been added in Section A.4.4.2. of PoA DD.	
<u>Clarification Request No. 12.</u> It is not described transparently what barriers were behind for not chosen other cooking technologies? The justification shall be substantiated with relevant supportive (English version).	A.4.3.1	The additionality of the PoA is demonstrated using the Guidelines on the demonstration of additionality of small-scale project activities (version 09.0)	As per para 2 (c) of the “Guidelines of the demonstration of additionality of small-scale project activities”, documentation of barriers is not required for the positive list of technologies and project types that are defined as automatically additional as programme is fulfilling the all criteria’s of the 2 (c). This issue is now resolved. [IRL# 3, 56 and 66] <input checked="" type="checkbox"/>
<u>Clarification Request No. 13.</u> Project participant shall demonstrate the investment barrier through financial calculation analysis approach where it will also demonstrate how CDM fund could alleviate the same barrier.	A.4.3.1	The additionality of the PoA is demonstrated using the Guidelines on the demonstration of additionality of small-scale project activities (version 09.0)	As per para 2 (c) of the “Guidelines of the demonstration of additionality of small-scale project activities”, documentation of barriers is not re-

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			<p>quired for the positive list of technologies and project types that are defined as automatically additional as programme is fulfilling the all criteria's of the 2 (c). This issue is now resolved.</p> <p>[IRL# 3, 56 and 66]</p> <p>☑</p>
<p><u>Clarification Request No. 14.</u></p> <p>The investment barriers description given in point (a) under section A.4.3 is not in line with the investment description given in detailed under page 9 of POA DD.</p>	A.4.3.1	<p>The additionality of the PoA is demonstrated using the Guidelines on the demonstration of additionality of small-scale project activities (version 09.0)</p>	<p>As per para 2 (c) of the “Guidelines of the demonstration of additionality of small-scale project activities”, documentation of barriers is not required for the positive list of technologies and project types that are defined as automatically additional as programme is fulfilling the all criteria's of the 2 (c). This issue is now resolved.</p> <p>[IRL# 3, 56 and 66]</p> <p>☑</p>

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Clarification Request No. 15. .Provide the supportive (English evrsion) to validate the statement <i>"Furthermore, as middle and low income households have difficulties in access in financing from local commercial banks, rural credit cooperatives and other financial institutions"</i>	A.4.3.1	This is no longer relevant in the revised PoA-DD.	Project proponent has removed the statement from the revised PoA-DD. This issue is now resolved. [IRL# 2 and 56] <input checked="" type="checkbox"/>
Clarification Request No. 16. Project proponent need to clarify the full meaning of PCDM.	A.4.4.1	PCDM is programmatic CDM. This has been clarified in the PoA DD	Full meaning of PCDM is programmatic CDM and same has been clarified in the revised PoA-DD. This issue is now resolved. [IRL# 56] <input checked="" type="checkbox"/>
Clarification Request No. 17. The sampling approach of the programme shall be in line with the latest UNFCCC guideline on sampling.	A.4.4.6	The related content has been revised in the PoA DD. The sampling approach to be used is in line with the Stratified Random Sampling method of EB guidelines. The related supportive evidence issued by Zhoukou	Project proponent has been revised the sampling approach of the project as per "General guidelines for sampling and surveys for small-scale CDM Project activities Ver. 02.0" guideline in the revised PoA DD. This issue is now resolved.

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		City rural energy office to support the baseline survey has been provided to DOE.	[IRL# 56 and 59] <input checked="" type="checkbox"/>
<u>Clarification Request No. 18.</u> Project proponent need to justify with supportive documents that no ODA has been diverted in this project activity	A.4.5.1	The Coordination/Management Entity confirms that there is no fund from Annex-I countries to the host country in the Programme. The evidence will be submitted to DOE.	Project proponent has been submitted self declaration letter which confirms that there are no ODA or public funding involved in the project. This issue is now resolved. [IRL# 32 and 60] <input checked="" type="checkbox"/>
<u>Clarification Request No. 19.</u> Project proponent need to clarify the source of the starting date with supportive documents.	B.1.1.	<p>The date format of evidence has been revised and the detailed date has been added according to requirement by DOE.</p> <p>The detailed construction date for each biogas unit can be verified either in the database of each CPA or in the individual file for each biogas unit. The date of the first digester was constructed (01/07/2007) was specified in the CPA1st Wangdian database, which has been submitted to DOE before.</p> <p>The user's file of the first biogas digester including the starting date for construction (01/07/2007) and the digesters acceptance construction certificate involving the first biogas digester (total 1,021 biogas units, from 01/07/2007 to 31/12/2007) have been provided to</p>	The construction date of the first biogas digester has been considered as a starting date of the project. The date has been verified with digesters acceptance construction certificate. This issue is now closed. [IRL# 40 and 56] <input checked="" type="checkbox"/>

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		DOE.,	
Clarification Request No. 20. Provide the environmental impact assessment report which was approved by Henan Zhoukou Environmental Protection Bureau for project activity.	C.2.1.	The EIA and the its approval for Zhoukou City will be provided to DOE.	Project proponent has been submitted EIA and the its approval for Zhoukou City. This issue is now resolved. [IRL # 27 and 28] <input checked="" type="checkbox"/>
Clarification Request No. 21. It is not clear any stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws? Clarify.	D.2.3.	There are no specific regulations in China for stakeholder consultation for small biogas digester projects. The stakeholder consultant is held dedicatedly for CDM. There is no regulation/law requires this. This survey is for CDM purpose only, it is not required by any national law/regulation, thus no law/regulation indicate such survey.	Stakeholder meeting is required by any regulations/laws in China for CDM programme activity project. Same has now been clarified in the PoA-DD. This issue is now resolved. [IRL# 5 and 6] <input checked="" type="checkbox"/>
Clarification Request No. 22. Project proponent need to clarify how an eligibility criterion 7 of the methodology AMS.I.C, version.19 is not applicable here?	E.2.1.6.	As per the point c) of eligibility criteria (see section A.4.2.2 of the PDD), the biogas digesters under the proposed CPA should be new-built to meet the inclusion criteria, which don't involve any retrofit or modification of existing facility for renewable energy generation.	Project activity will replace the coal based cooking system with new biogas digester based cooking system which don't involve any retrofit or modification of existing cooking system facility. Further,

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			this point is included CPA inclusion criteria (C) and will be checked at the CPA level also. [IRL# 23] <input checked="" type="checkbox"/>
<u>Clarification Request No. 23.</u> Project boundary is biogas digesters and their attachments implemented in Zhoukou City, Henan Province. However, geographical information is need to be clarified in boundary description given in the POA DD.	E.3.1.	In Zhoukou city, the geographical boundary is the geographic area that all biogas digesters and their accessories included in the CPA occupy. This content has been added in the PoA-DD.	The geographical boundary is the geographic area that all biogas digesters and their accessories and same has now been clarified in the revised PoA DD. This issue is now resolved. [IRL# 56] <input checked="" type="checkbox"/>
<u>Clarification Request No. 24.</u> In the table of section E.3, it is not transparently explained the sources and gases in baseline and project emission within the boundary.	E.3.2.	The emission source has been revised in Sector E.3. of the PoA-DD.	This issue is now resolved. [IRL# 56] <input checked="" type="checkbox"/>
<u>Clarification Request No. 25.</u> Project proponent need to provide evidence (English translation) to prove that incentive from the CDM was seriously considered in the decision to proceed with the PoA.	E.5.6.	The evidence will be provided to the DOE.	Project proponent has submitted the board minutes of the meeting where CDM was considered for the project. This issue is now resolved. [IRL# 34] <input checked="" type="checkbox"/>

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<p><u>Clarification Request No. 26.</u></p> <p>Project proponent need to provide the supportive to verify the gross generation capacity i.e. 16.08 MW_{th} mentioned in the section E.6.2 of the POA-DD</p> <p>Further, clarify what could have been the project fossil fuel in the absence of the project activity.</p>	E.6.1.1.	<p>The number has been deleted in the revised PoA DD as it is no longer applicable.</p> <p>As mentioned above, the fossil fuel to be used in absence of project activity would be coal.</p> <p>Related content has been revised in the PoA DD.</p>	<p>This issue is now resolved.</p> <p>[IRL# 56]</p> <p><input checked="" type="checkbox"/></p>
<p><u>Clarification Request No. 27.</u></p> <p>Project proponent need to clarify what option of applied methodology would be used to determine the quantity of coal in base case of the project activity?</p>	E.6.1.2.	<p>The amount of coal (and LPG) displaced is calculated based on the amount of biogas supplied to the thermal equipment as per the baseline methodology used.</p> <p>The monitoring approach to monitor the amount of biogas employed in the project activity is in line with AMS-I.I. version 3, which has been approved in small-scale working group (clarification 571).</p>	<p>The calculation of coal (and LPG) displaced is based on the amount of biogas (and consequently) thermal energy supplied to the household and the efficiency of the thermal unit (in this case cook stoves) as per AMS-I.C v 19. The monitoring approach to monitor the amount of biogas employed in the project activity is in line with AMS-I.I. version 3, which has been allowed by small-scale working group (clarification 571).</p> <p>This issue is now resolved.</p> <p>[IRL# 3,4 and 56]</p> <p><input checked="" type="checkbox"/></p>

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Clarification Request No. 28. Project proponent need to provide the operation and control manual of the POA project.	E.7.2.1.	Operation and control manual of the POA project provided to DOE.	This issue is now resolved. [IRL# 7] <input checked="" type="checkbox"/>
Clarification Request No. 29. Project proponent need to clarify how the management system of this PoA fully comply with the requirements of Annex 5 of EB70	E.7.2.1.	Monitoring plan and management system of the PoA has been revised as per Annex 5 of EB70	Project proponent has been revised monitoring plan and management system of the project in the revised PoA-Dd as per Annex 5 of EB70. This issue is now resolved. [IRL# 56 and 58] <input checked="" type="checkbox"/>
Clarification Request No. 30. The following points are observed in the sampling approach of the programme given in section A.4.2.of the PoA-DD: (a) In description of the “Objectives and reliability requirements” under Sampling Design (A), Identification of the sampling requirements (requirement for methodology or guideline, if it is guideline then which para of the guideline) is not clear. Also, how 90/10 confidence/precision chosen for programme is in line with Standard for sampling and surveys for CDM Project activities and programme of activities Ver. 03.0. (b) In description of the “Target population” under Sampling Design (A) “The target population is all registered biogas units”. However, according	EB 69	(a) The sampling plan has been updated to clearly indicate where the requirement for sampling of nk,y proportion of systems that remain operating comes from. References to “Standard for sampling and surveys for cdm project activities and programme of activities” (Version 03.0) and the “Guidelines for sampling and surveys for CDM project activities and programme of activities” (Version 2.0) have been added to the start of the sampling section. AMS I.I v3 para.17 sets the requirements for sampling of the percentage of systems operating including the level on confidence and precision. (b) The description of ‘Target population’ in the PoA-DD has been revised to be consistent with the description of the ‘target group.’	(a) Project proponent has clarified in the PoA-DD that sampling will be carried out at CPA level as per “Standard for sampling and surveys for cdm project activities and programme of activities” (Version 03.0) and the “Guidelines for sampling and surveys for CDM project activities and programme of activities” (Version 2.0). Further, sampling inspection will be carried out 90/10 confidence/precision for annual period. It can be accepted as same approach has been taken by the project proponent.

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<p>to the CPA inclusion criteria of the POA-DD, target group is household biogas digester. Why information is not same? Clarify.</p> <p>(c) Why simple random sampling is appropriate for the programme and how simple random sampling will be calculated is not clearly defined under sampling method description of Sampling Design (A).</p> <p>(d) In description of the "Sampling Frame" population under Sampling Design (A), it is not clear to DOE from where sampling frame information will be taken such as CPA database etc. How primary data information will be collected from household such as acceptance certificate or similar documents? How Sampling frame information and data will be maintained (softcopy/hardcopy) and who will be responsible person to monitor these activity?</p> <p>All above information shall be clarified in Sampling frame population section.</p> <p>(e) In description of the "sampling requirements" under Sampling Design (A), it is stated "According to the project planner's experience, the rate of biogas units still operational is higher than 95%". However, how project planners got this experience or what is the background of this experience (eg. survey or pilot study) shall be clarified in this section.</p> <p>It is also stated that "local government's requirement that the operation rate of biogas units is</p>		<p>(c) Simple random sampling is selected as the target populations are homogeneous. That means that each unit of the size k in a CPA are equally likely to be operating because the equipment is built and installed to the same specification and so no variation in operation is expected. The units will also be subject to acceptance test, periodic inspections and maintenance in case of malfunctioning, supporting the assertion that they should be equally likely to operate. The DDs have been adjusted to clarify the assumption.</p> <p>'Sampling method' section of Sampling Design (A) in the PoA-DD has been revised to clarify that the target population is homogeneous and to refer to Para. 8 of "Guidelines for sampling and surveys for CDM project activities and programme of activities" (Version 2.0)</p> <p>(d) According to the Guidelines for sampling and surveys for CDM project activities and PoAs Version 2.0 a sampling frame is "A <i>sampling frame is a complete listing of all individual units (elements, members) that can be considered as a representation of the whole population, and which can be used as a basis for selecting a sample, such as a list of all households in an area that have had solar cookers installed</i>". In this case the sampling frame is the database which includes all the biogas units installed in</p>	<p>nent according to the requirements of the para 17 of AMS.I.I.</p> <p>(b) Target population is rural biogas unit and the same is now consistent throughout PoA-DD. Same has been checked by DOE with feasibility study report [IRL# 23] of the programme and accepted.</p> <p>(c) Project proponent has chosen simple random sampling approach as the target population (biogas units of size k) is homogeneous as the same type and specification of the stove will be distributed in the programme. Where a CPA contains units with different sized biodigesters will be treated as separate populations for the purpose of sampling.</p> <p>It can be accepted as type and the stove has been physically inspected by DOE during site audit and found rural households are using the same type of biogas di-</p>
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<p>must be not lower than 95%". Project proponent will provide supportive to verify this statement.</p> <p>(f) Source or guideline reference of the sampling calculation formula mentioned in the PoA-DD is not clear.</p> <p>(g) According to para 18 of Annex4, EB 69, field measurement procedure shall be indicated as per "Guidelines for sampling and surveys for CDM project activities and programme of activities" (Version.02)</p> <p>(h) "QA/QC" description given under Data to be collected (B) is not as per para 34 of "Guidelines for sampling and surveys for CDM project activities and programme of activities" (Version.02).</p> <p>(i) How sampling data will be used? It shall be clarified in "Analysis" of Data to be collected (B).</p> <p>(j) Under "Implementation plan" of Data to be collected (B), a general description of qualification and experience of personal who will be engaged shall be clarified as per requirements of the para 36 of "Guidelines for sampling and surveys for CDM project activities and programme of activities" (Version.02).</p>		<p>the CPA and the size of the units installed. The sampling frame section of the DDs have been updated to reflect this. Note that the sampling frame is not required to include the additional information requested, but this is described in the monitoring plan details, specifically monitored parameter n_{ky} and in the implementation section of the sampling plan.</p> <p>(e) The sentence on project planners experience has been removed. The reference to the national standard has been provided to the DOE.</p> <p>(f) The following reference has been added to the sample calculation of the PoA-DD: "As per the "Guidelines for sampling and surveys for CDM project activities and programme of activities" (Version 2.0) - example 1- A simple random sample of a proportion."</p> <p>(g) A field measurement section has been added to the sampling plan under "Data to be collected" in line with the "Guidelines for sampling and surveys for CDM project activities and programme of activities" (Version.02).</p> <p>(h) The QA/QC section of the PDD has been updated as per para 34 of "Guidelines for sampling and surveys for CDM project activities and programme of activities" (Version.02).</p> <p>The training procedure of field personal has been elaborated under "QA/QC" in section B. Data to be collected of PoA-DD.</p>	<p>gester. Further, same has also been checked with the technical specification of the biogas stove [IRL# 25] and feasibility study report [IRL# 23].</p> <p>(d) The sampling frame will refers the all information sources from database. In the database, size of the biogas digester, country, town, village of the household, register number of the household and ID number of the householder. A person will be deputed by biogas service centre to collect the database information. DOE has checked the sampling frame and found that sampling frame has been prepared as per Guidelines for sampling and surveys for CDM project activities and PoAs Version 2.0.</p> <p>(e) As sentence of project planners experience has been removed by project proponent. Hence, this issue is now resolved.</p>
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		<p>(i) An <i>Analysis</i> section has been added to the sampling plan under “Data to be collected” in line with the “Guidelines for sampling and surveys for CDM project activities and programme of activities” (Version.02).</p> <p>(j) A general description of qualification and experience of personal who will be engaged is provided in section “A.4.4.1 Operational and management plan”. The statement has been included in the PDD for clarity.</p> <p>Description of the training and qualifications of the personnel involved in the sampling has been added to the PoA-DD. In addition, the description of qualification of personnel involved in the the construction of the biogas units has been added. The DOE has been provided with an example the qualifications of one of the construction teams including proof of the qualification of the company, the staff involved, business licence and the biogas digester user file that is a record of the installation of the biogas digester.</p>	<p>(f) Sampling size has been calculated as per the formula given in the Guidelines for sampling and surveys for CDM project activities and programme of activities” (Version 2.0) - example 1- A simple random sample of a proportion.” Same is now clarified by PP in the PoA-DD.</p> <p>(g) According to the requirement of “Guidelines for sampling and surveys for CDM project activities and programme of activities” (Version.02), field measurement has now been included by the project proponent under “Data to be collected”. In the field measurement, technicians of the biogas stove centre will do a survey where they visit annually to households and check that biogas digester and stove are operating or not. Survey information will be collected and stored in the database at the end of the each year.</p> <p>(h) Training procedure of field</p>
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			<p>personal has been elaborated under “QA/QC”. Training will be done at biogas service centre where technical expert of the technological department of the project proponent. In the training, field personal will get training on maintenance and operation of the different equipment of the biogas digester and stove. Including this, the training will provide on how personal will collect and store the database information. Training procedure of the programme can be accepted as same is in line with the requirement of the para 34 of “Guidelines for sampling and surveys for CDM project activities and programme of activities” (Version.02).</p> <p>(i) Project proponent has included an analysis section where they clarified that how the information will survey or inspection result information will be collected by CME, as well as CME will also ensure that the required precision</p>
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			<p>and confidence has been achieved by the sample taken, additional records will be sampled until precision and confidence will not be achieved. It can be accepted as same is in line with the requirements of the "Guidelines for sampling and surveys for CDM project activities and programme of activities" (Version.02).</p> <p>(j) Project proponent has explained the qualification and experience of personal who will be engaged in the programme in section "A.4.4.1 Operational and management plan". as per the requirements of the para 36 of "Guidelines for sampling and surveys for CDM project activities and programme of activities" (Version.02).</p> <p>All above issues are now closed.</p> <p>[IRL# 59 and 70]</p> <p><input checked="" type="checkbox"/></p>
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<p><u>Clarification Request No. 31.</u></p> <p>According to the CPA eligibility condition (f) in section A.4.2.2. of the PoA-DD, 13,800 households can participate per CPA (reason behind is that a re-calculation shows that with a rated capacity of the biogas stove (applied in the PoA) of 3,26 kW to keep the 45MWth threshold for thermal energy in SSC this is the maximum possible number that the programme is able to run under small scale). However, as per list of CPA's submitted to UNFCCC, there are some CPAs with more than 15,000 households. Clarify the reason.</p>	TR Comments	<p>On the CPA list, we have added a footnote to the PoA-DD as follows:</p> <p>Please note that the number of units in the description of some of the CPAs in this list exceed the limit of the number of units per CPA in eligibility criteria (f), this will need to be resolved before any such CPAs are added to the PoA. The first CPA has fewer than 13,800 units and therefore complies with all of the eligibility criteria and the PPs have decided to proceed with the validation of the PoA and the first CPA.</p>	<p>Project Proponent has inserted a footnote in the PoA D to make it more transparent.</p> <p>Also, as per the eligibility criteria defined in the PoA DD, such CPA having more than 13800 units may not applicable to be included as CPA in future.</p> <p>Hence this issue is closed. <input checked="" type="checkbox"/></p>
<p><u>Clarification Request No. 32.</u></p> <p>Baseline scenario is either utilization of coal or LPG. However, it is not fully clear how the baseline scenario has been chosen? Clarify.</p>	TR Comments	<p>The baseline study documents have been submitted.</p> <p>The study was conducted only to determine the fraction of households using coal versus LPG in the baseline (99.3% vs 0.67%).</p> <p>The manner of baseline study is questionnaire survey, and then generation of result from all questionnaires. The PO did not develop report for this study; the only documentations available are collected questionnaires and result database, which have been provided.</p> <p>The survey was carried out in each county/town/village, householders in this county/town/village are sampled</p>	<p>Project proponent has submitted spread sheet on the baseline study which is not enough. As survey was not appropriately done during site audit therefore PP need to provide the survey all questionnaires to verify the spread sheet details.</p> <p><u>Final Response from audit team:</u></p>

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Project Title: Henan Province Zhoukou City Rural Household Biogas Development Programme (2007-2010)

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		<p>randomly, and the results are also listed by county/town/village in the database.</p> <p>The survey was carried out in Aug 2007. The purpose of this survey is to identify the fuel type of cook in householders' kitchen, therefore fuel type is one of parameters in the survey, this is also the only parameter used in the Programme.</p> <p>The samples of this survey cover all area of the Programme, except group samples by location, in order to make cross comparison, PO also grouped samples to "biogas digester has installed" and "digester is not installed yet". For the group "installed", the question is fuel type before digester, for the group "not installed yet", the question is current fuel type.</p> <p>This survey is implemented only for CDM purpose; no other reference document is available. Furthermore, since such survey is not required by any national/local law or regulation, no any requirement can be found from any law or regulation.</p> <p><u>Responses 2:</u></p> <p>All original questionnaires with the survey responders' sign are on project site and the sample of PDF version has been provides to DOE.</p> <p>Also, the authorize third party, i.e. Zhoukou City rural Energy Office has been attached. This document is confirms that survey details are correct.</p> <p>In the document, the course of survey including all survey details and the authenticity of results from all valid</p>	<p>DOE has verified the base-line spread sheet details with submitted questionnaires and found that coal and LPG is the baseline scenario of the programme. Further, PP has also submitted Zhoukou City rural Energy Office certified letter which is confirming that project proponent has done baseline study according to requirement of the CDM and applied methodology. DOE has accepted project proponent approach. This issue is now resolved.</p> <p>☑</p>
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		questionnaires has been stated clearly.	
<p><u>Clarification Request No. 33.</u></p> <p>How expected proportion value of the sampling calculation has been changed in the version 09 of the PoA-DD from version 08? Clarify this point.</p>	<p>TR Comment</p>	<p>95% is the expected utilization rate, but used 50% in the sample size calculation to be conservative as 50% gives the largest sample size and this approach is standard practice when the p is unknown</p>	<p>According to the local government instruction given in biogas service centre poster [IRL# 71] of the host country, utilization rate of the biogas unit shall not be lower than 95%. But since p is unknown therefore as per conservative approach 50% will be considered in the sample size calculation as 50% gives the largest sample size and this approach is standard practice [IRL# 72] when the p is unknown. It can be checked with sampling calculation sheet.</p> <p>This issue is now resolved.</p> <p><input checked="" type="checkbox"/></p>

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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

Final Report 29-12-2012	Information Reference List PoA Title: Henan Province Zhoukou City Rural Household Biogas Development Programme (2007-2010)	Page 1 of 7	
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Reference No.	Document or Type of Information	Date of document																
1	<p>On-site interviews and inspections of the project site of the “Henan Province Zhoukou City Rural Household Biogas Development Programme (2007-2010)” by TUV SÜD validation team, Conducted on June 6-9, 2010.</p> <p><u>Validation team on site :</u></p> <table><tr><td>Supratik Dutta</td><td>TUV SUD South Asia</td></tr><tr><td>Xiaoying Chen *</td><td>TUV SUD South Asia</td></tr><tr><td>Simon Shen*</td><td>TUV SUD South Asia</td></tr></table> <p><u>Interviewed persons :</u></p> <table><tr><td>Zheng Punchang</td><td>Zhoukou New Energy Development Co., Ltd.</td></tr><tr><td>Bai Juchuan</td><td>Zhoukou New Energy Development Co., Ltd.</td></tr><tr><td>Deng Decai</td><td>Zhoukou New Energy Development Co., Ltd.</td></tr><tr><td>Song Zhijian</td><td>Zhoukou New Energy Development Co., Ltd.</td></tr><tr><td>Julia Elmgren</td><td>Gazprom Marketing & Trading Limited</td></tr></table> <p>• <i>Left the organization</i></p>	Supratik Dutta	TUV SUD South Asia	Xiaoying Chen *	TUV SUD South Asia	Simon Shen*	TUV SUD South Asia	Zheng Punchang	Zhoukou New Energy Development Co., Ltd.	Bai Juchuan	Zhoukou New Energy Development Co., Ltd.	Deng Decai	Zhoukou New Energy Development Co., Ltd.	Song Zhijian	Zhoukou New Energy Development Co., Ltd.	Julia Elmgren	Gazprom Marketing & Trading Limited	
Supratik Dutta	TUV SUD South Asia																	
Xiaoying Chen *	TUV SUD South Asia																	
Simon Shen*	TUV SUD South Asia																	
Zheng Punchang	Zhoukou New Energy Development Co., Ltd.																	
Bai Juchuan	Zhoukou New Energy Development Co., Ltd.																	
Deng Decai	Zhoukou New Energy Development Co., Ltd.																	
Song Zhijian	Zhoukou New Energy Development Co., Ltd.																	
Julia Elmgren	Gazprom Marketing & Trading Limited																	
2	<p>UNFCCC homepage for the PoA</p> <p>http://cdm.unfccc.int/ProgrammeOfActivities/Validation/DB/PX3DLROQVMMON45T0ZHBM4DKLSCZJ/view.html</p>	-----																
3	Approved small scale baseline and monitoring methodology AMS I C, Version.19																	
4	<p>SSC WG clarification (request no. 571) on the use of monitoring requirements from AMS-I.I for biogas project using AMS. I. C</p> <p>http://cdm.unfccc.int/methodologies/SSCmethodologies/clarifications/53546</p>	14.10.2011																
5	Notification for stakeholder meeting, Zhoukou Coal Company	21.07.2007																
6	CDM Questionnaires for stakeholder meeting, Zhoukou Coal Company	2007																
7	Operation and maintenance manual, Zhoukou New Energy Development Co., Ltd.	Submitted May 2011																

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Reference No.	Document or Type of Information	Date of document
8	Letter of Approval (LOA) letter (Reference No. EA/GAZPROM/05/2012) from The Environment Agency, United Kingdom	26.04.2012
9	Letter of Approval (LoA) letter (No. 2540) for Henan Province Zhoukou City Rural Household Biogas Development Programme (2007-2010) issued by National Development and Reform Commission of the Republic of China	July, 2010
10	Evaluation on social & economic benefits of rural biogas projects in Henan Province/China Biogas http://d.wanfangdata.com.cn/Periodical_zgzq200805015.aspx	Last accessed on 8 th November 2011
11	Counties under Henan Province http://www.henan.gov.cn/hngk/system/2006/09/04/010004415.shtml	Last accessed on 8th November 2011
12	Temperature of Henan Province http://cdc.cma.gov.cn/shishi/climate.jsp?stprovid=%BA%D3%C4%CF&station=57083	Last accessed on 8th November 2011
13	Henan Agriculture Overview http://ha.xinhuanet.com/xhzt/2006-07/27/content_7628315.htm	Last accessed on 8th November 2011
14	Sunlight Rate in Henan province http://wenku.baidu.com/view/2c3997d6b14e852458fb57eb.html	Last accessed on 8th November 2011
15	Henan Province poverty alleviation and development main villages/town list http://www.hnkfb.gov.cn/pkxxc/%E5%91%A8%E5%8F%A3%E5%B8%820.htm	Last accessed on 8th November 2011
16	State Council Leading Group Office Of Poverty Alleviation and Development http://59.252.32.30/publicfiles//business/htmlfiles/FPB/index.html	Last accessed on 8th November 2011
17	Henan Statistical Yearbook, 2007 http://ishare.iask.sina.com.cn/f/14475550.html	Last accessed on 8th November 2011

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Reference No.	Document or Type of Information	Date of document
18	Implications of changes in household stoves and fuel use in China http://www.bioenergylists.org/stovesdoc/Smith/Edwards/04_edwards_1.pdf	Last accessed on 8th November 2011
19	Weblink of china news on barriers of the implementing the biogas cook stoves http://www.chinanews.com/ny/2011/03-28/2933454.shtml	Last accessed on 8th November 2011
20	Weblink of the Xudaco biogas stove (Manufacturer of the stove) http://www.xundaco.com/newEbiz1/EbizPortalFG/portal/html/CategoryList.html?ProductMultiCategoryPicker210_action=Searchcategory&ProductPicker_action=Searchcategory&CategoryID=c373e91bf8ee2d4d8f7f1ba707124ede#	Last accessed on 8th November 2011
21	An article on Henan agriculture, published on 27.07.2006 in www.ha.xinhuanet.com	Submitted on March 2011
22	Screen shot of the Solar cooker introduction in china web page published in www.CnSolar.net	Submitted on March 2011
23	Feasibility study report (FSR) prepared by Zhengzhou Keyuan Energy Saving and Environmental Protection Engineering Design Institute	July 2008
24	Modalities of Communication	18.03.2011
25	Biogas stove specification, provided by Zhoukou New Energy Development Co., Ltd.	Submitted on March 2011
26	China national standard for biogas construction:GB/T 4750-2002 ; GB/T 4751-2002;GB/T 4752 2002, GB/T3606-2001	Submitted on March 2011
27	Environment Impact Assessment (EIA) report for project activity, submitted by Zhoukou New Energy Development Co., Ltd.	06.08.2008
28	EIA approved by Zhoukou City Environmental Protection Bureau	06.08.2008
29	The confirmation letter from the Energy office of the Zhoukou City, Henan province on cooking fuel in rural households in the province	Submitted on March 2011

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Reference No.	Document or Type of Information	Date of document
30	A declaration from Zhoukou New Energy Development Ltd on biogas digesters installed on or after 01.07.2007 will be considered under CPA.	Submitted on March 2011
31	The confirmation letter from the Agriculture Bureau of Zhoukou City, Henan province on no law/regulation to mandate the construction or installation of biogas digesters in the region	Submitted on March 2011
32	A certification letter from the Zhoukou Energy Office on no other income in the PoA project except CDM	14.06.2011
33	Mid-long term plan of rural household biogas development at Zhoukou city, Henan province	August 2006
34	Board minutes where CDM was considered for the project activity, Zhoukou New Energy Development Co., Ltd.	26.10.2006
35	Implementation agreement of Henan Province Zhoukou City Household Biogas PCDM Project (also known as CER transfer contract)	08.04.2010
36	Sample of Zhoukou City rural biogas digester construction Acceptance Certification, submitted by Zhoukou New Energy Development Co., Ltd.	Submitted on March 2011
37	Transfer contract of project was signed between Zhoukou Coal Company and Zhoukou New Energy Development Co., Ltd	15.09.2008
38	Domestic biogas standard, published by standard press of china (GB), GB/T-3601-2001	Submitted on March 2011
39	Lifetime of biogas digester https://xbehq.gov.cn	Submitted on March 2011
40	Construction certificate of the first biogas digester in Wangdian, submitted by Zhoukou New Energy Development Co., Ltd.	01.07.2007
41	Zhoukou City rural biogas digester construction Acceptance Certification (Executing unit: Huiyang county Rural Energy Office, Acceptance Unit: Zhoukou City Rural Energy Office, date of acceptance: 20/05/2008-22/05/2008, Construction Date: 07/2007-12/2007)	28.05.2008
42	Economic Evaluation Methods and Parameters for Construction Project (Version.03)	Released by the NDRC in

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Reference No.	Document or Type of Information	Date of document
		2003
43	CPA List	Submitted on September 2011
44	Deceleration on no financial assistance received from any finance institutional and bank, submitted by Zhoukou New Energy Development Co., Ltd.	22.06.2011
45	Last implementation of PoA issued by Zhoukou City Energy Office, submitted by Zhoukou New Energy Development Co., Ltd.	Submitted on June 2011
46	China Energy Statistical Yearbook 2010 printed by china Statistics Press	Submitted on June 2011
47	Sample questionnaires for baseline survey, submitted by Zhoukou New Energy Development Co., Ltd.	Submitted on June 2011
48	Baseline survey summary (biogas digester installed), conducted by Zhoukou City Rural Energy Office	Submitted on June 2011
49	Baseline survey summary (no biogas digester), conducted by Zhoukou City Rural Energy Office	Submitted on June 2011
50	The confirmation letter from the Zhoukou city rural energy office on the baseline survey data	25.10.2011
51	Construction standard of rural domestic biogas digester	Submitted on June 2011
52	IPCC 2006 Revised Guidelines :Volume 02, Chapter 01,Table 1.3	Submitted on June 2011
53	Approved small scale baseline and monitoring methodology AMS III D, Version.18	
54	Weather of the Heenan Province http://wenku.baidu.com/view/2c3997d6b14e852458fb57eb.html	Last accessed on 8th November 2011
55	Simple cost analysis calculation spread sheet	15.11.2011
56	Final PoA-DD (version 9)	28.12.2012
57	Emission Reduction Purchase Agreement between Zhoukou New Energy Development Co., Ltd. and Gazprom Marketing & Trading Limited	11.05.2010

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Reference No.	Document or Type of Information	Date of document
58	Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmed of activities (version.02.1), EB 70	-----
59	Guidelines for sampling and surveys for CDM project activities and programme of activities" (Version.02)	-----
60	A self declaration on no public funding from Annex parties, submitted by Zhoukou New Energy Development Co., Ltd.	16.06.2012
61	Non-binding best practice examples to demonstrate additionality for SSC project activities (Annex-34 of EB 35	-----
62	AMS.I.I "Biogas/biomass thermal applications for households/small users" (Version.03)	-----
63	"Guidelines on Assessment of De-bundling for SSC Project Activities (Ver. 03.0)"	-----
64	General Guidelines to SSC CDM methodologies (Ver. 17.0)	-----
65	Environment Impact Assessment Law of the People's Republic of China,	Submitted on May 2012
66	Guidelines on the demonstration of additionality of small-scale project activities (Version.09)	-----
67	Rural Biogas Practical Technology. ISBN 962-450-830-1, Mr.Gao Deling, pressed on Oct 2006.	Submitted on May 2012
68	Database of household biogas digesters which maintain by CME (Zhoukou New Energy Development)	Submitted on August 2012
69	CPA list submitted to UNFCCC before 31/01/2010	31.01.2010
70	Standard for sampling and surveys for cdm project activities and programme of activities" (Version 03.0)	-----
71	Biogas service centre poster	Submitted on October 2012
72	Watkins, A. E., Scheaffer, R. L. and Cobb, G. W., 2010. Statistics: From Data to Decision. London: John Wiley & Sons (page 372)	Last accessed on December 2012

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Reference No.	Document or Type of Information	Date of document
	http://books.google.co.uk/books?id=0b71E1UOqsC&printsec=frontcover&dq=statistics&hl=en&sa=X&ei=CojdUNL9KqKw0AX29YE4&ved=0CEwQ6AEwBA#v=onepage&q&f=false	

Annex 3: Appointment Certificates

CERTIFICATE OF APPOINTMENT

Mr. Agarwal, Nikunj fulfills the requirements of the Certification Body "Environment and Energy" of TÜV SÜD South Asia Pvt Ltd to participate in audits.

Qualification applicable to					
Standard	CDM	GS	VCS	VER	Other
Date	22.03.12				

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		22.03.12	22.03.12	22.03.12	22.03.12	1.1,1.2, 3.1, 4.10, 13.1,13.2, 15.2

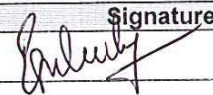
Other qualification						
Country Expertise						
Region	1	2	3	4	5	Other
Date	22.03.12					
Further countries						
Financial Expertise						
Date	22.03.2012					

Qualification in technical areas	
Technical Area	Date
1.2_Energy generation from renewable energy source	22.03.12
13.1_Waste handling and disposal	22.03.12
3.1_Energy demand	22.03.12
13.2_15.2_Animal waste management	22.03.12
1.1_4.10_Thermal energy generation..	23.11.12

This appointment is valid until 28.02.2013 and is bound by internal requirements of the Certification Body "Environment and Energy" of TÜV SÜD South Asia Pvt Ltd.

In case of loss of validity of this certificate as per result of an assessment according to internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference no. CB-IND-CCP-0001/001.

Date	Signature
23.11.2012	



South Asia

CERTIFICATE OF APPOINTMENT

Mr. Dutta, Supratik fulfills the requirements of the Certification Body "Environment and Energy" of TÜV SÜD South Asia Pvt Ltd to participate in audits.

Qualification applicable to					
Standard	CDM	GS	VCS	VER	Other
Date	07.04.12				

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		07.04.12	07.04.12			1.2

Other qualification						
Country Expertise						
Region	1	2	3	4	5	Other
Date	07.04.12					
Further countries						
Financial Expertise						
Date	07.04.12					

Qualification in technical areas	
Technical Area	Date
1.2_Energy generation from renewable energy source	07.04.12

This appointment is valid until 28.02.2013 and is bound by internal requirements of the Certification Body "Environment and Energy" of TÜV SÜD South Asia Pvt Ltd.

In case of loss of validity of this certificate as per result of an assessment according to internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference no. CB-IND-CCP-0012/001.

Date	Signature
21.11.2012: Extension of Validity	



South Asia

CERTIFICATE OF APPOINTMENT

Mr. Habbu, Ajit fulfills the requirements of the Certification Body "Environment and Energy" of TÜV SÜD South Asia Pvt Ltd to participate in audits.

Qualification applicable to					
Standard	CDM	GS	VCS	VER	Other
Date	21.11.12				

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date						1.1, 4.10

Other qualification						
Country Expertise						
Region	1	2	3	4	5	Other
Date	21.11.12					
Further countries						
Financial Expertise						
Date						

Qualification in technical areas	
Technical Area	Date
1.1_4.10_Thermal energy generation	21.11.2012

This appointment is valid until 28.02.2013 and is bound by internal requirements of the Certification Body "Environment and Energy" of TÜV SÜD South Asia Pvt Ltd.

In case of loss of validity of this certificate as per result of an assessment according to internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference no. CB-IND-CCP-0016/001.

Date	Signature
21.11.2012	



South Asia

CERTIFICATE OF APPOINTMENT

Mr. Kleiser Thomas fulfills the requirements of the Certification Body "Environment and Energy" of TÜV SÜD South Asia Pvt Ltd to participate in audits.

Qualification applicable to					
Standard	CDM	GS	VCS	VER	Other
Date	25.03.12				

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		25.03.12	25.03.12	25.03.12	25.03.12	1.1, 1.2, 4.1, 4.10

Other qualification						
Country Expertise						
Region	1	2	3	4	5	Other
Date	25.03.12					
Further countries						
Financial Expertise						
Date	25.03.12					

Qualification in technical areas	
Technical Area	Date
1.1_4.10_Thermal energy generation....	25.03.12
1.2_Energy generation from renewable energy source	25.03.12
4.1_Cement sector	25.03.12

This appointment is valid until 28.02.2013 and is bound by internal requirements of the Certification Body "Environment and Energy" of TÜV SÜD South Asia Pvt Ltd.

In case of loss of validity of this certificate as per result of an assessment according to internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference no. CB-IND-CCP-0022/001.

Date	Signature
21.11.2012: Extension of Validity	