



VERIFICATION AND CERTIFICATION REPORT

- 1ST PERIODIC –

ALTERNATIVE ENERGY PROMOTION
CENTRE (AEPC)

NEPAL BIOGAS SUPPORT PROGRAM-POA

Ref	CPA Title	Inclusion date
9572-0004	NEPAL BIOGAS SUPPORT PROGRAM - CPA 4: 19,970 DIGESTERS.	08 MAY 14
9572-0003	NEPAL BIOGAS SUPPORT PROGRAM - CPA 3: 19,959 DIGESTERS.	08 MAY 14
9572-0002	NEPAL BIOGAS SUPPORT PROGRAM - CPA 2: 19,927 DIGESTERS	08 MAY 14
9572-0001	NEPAL BIOGAS SUPPORT PROGRAM- CPA 1: 20,000 DIGESTERS.	31 JAN 13

UNFCCC REF. No. :POA: 9572

Monitoring Period: 31/01/2013 to 31/07/2014
(incl. both days)

Report No: 8111407859-14/100

Date: 24/02/2015

TÜV NORD CERT GmbH
JI/CDM Certification Program
Langemarckstraße, 20
45141 Essen, Germany
Phone: +49-201-825-3329
Fax: +49-201-825-2139
www.tuev-nord.de
www.global-warming.de

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Programme of Activities:	POA Title:		Registration date:	UNFCCC-No.:
	Nepal Biogas Support Program-PoA		31/01/2013	POA: 9572
			Verification No.:	
			1st periodic verification	
	Crediting period:		From:	To:
	☒ Renewable (7y) ☐ Fixed (10y)		31/01/2013	30/01/2020
Project Participant(s):	Project Scale:			
	☐ Large Scale ☒ Small Scale			
	Client:			
	Alternative Energy Promotion Centre (AEPIC)			
	Non Annex 1 country:		Annex 1 country:	
	Nepal		N/A	
	CME implementer from non Annex 1 country:		PP from Annex 1 country:	
	Alternative Energy Promotion Centre (AEPIC)		N/A	
Applied methodology/ies:	Title:		No.:	Scope(s) / TA(s)
	Switch from Non-Renewable Biomass for Thermal Applications by the User		AMS-I.E. ver. 4	1 / 1.2
Monitoring period and monitoring report	Monitoring period (MP):		Monitoring Report:	
	From:	To:	Draft version:	Final version:
	31/01/2013	31/07/2014	546	31/07/2014
Verification team / Technical Review and Final Approval:	Verification Team:		Technical review:	Final approval:
	Pankaj Patel (TL) Indrapal Parmar (TM/TE) G. Ezhilarasu (TM/TE) B. J. Mohinder Amarnath (TM/TE)		Kunal Rami	Kunal Rami
Key dates of verification:	Publication of MR :	DVerR issued:	On-site (from):	On-site (to):
	05/08/2014	05/09/2014	19/08/2014	22/08/2014
Summary of Verification opinion	Alternative Energy Promotion Centre (AEPIC) has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 1st periodic verification of the POA (include CPA-1, CPA-2, CPA-3 and CPA-4): "Nepal Biogas Support Program-PoA", with regard to the relevant requirements for CDM Programme of Activities. As a result of this verification, the verifier confirms that: ☒ all operations of the project are implemented and installed as planned and described in the validated project design document, ☒ the monitoring plan is in accordance with the applied approved CDM methodology, ☐ the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately (not applicable) ☒ the monitoring system is in place and functional. The project has generated GHG emission reductions, and ☒ the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. TÜV NORD JI/CDM CP herewith confirms that the project has achieved emission reductions in the above mentioned reporting period as listed below (verified amount).			
Emission reductions: [t CO_{2e}]	Total verified amount		As per draft MR:	As per POA-DD:
	139,197		139,323	61,510 /a
			ER achieved up to 2012-12-31	ER achieved from 2013-01-01
			N/A	139,197
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Abbreviations:

APEC	Alternative Energy Promotion Centre
BSP	Biogas Support Program
BUS	Biogas User Survey
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CME	Coordinating and Managing Entity
CO₂	Carbon dioxide
CO_{2eq}	Carbon dioxide equivalent
CL	Clarification Request
CPA	Component Project Activity
DVerR	Draft Verification Report
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
MP	Monitoring Plan
MR	Monitoring Report
NRB	Non Renewable Biomass
PA	Project Activity
PCP	Project Cycle Procedure
POA-DD	Programme of Activities Design Document
PP	Project Participant
PS	Project Standard
QA/QC	Quality Assurance / Quality Control
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
XLS	Emission Reduction Calculation Spread Sheet

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1. INTRODUCTION

Alternative Energy Promotion Centre (AEPC) has commissioned the TÜV NORD JI/CDM Certification Program (CP) to carry out the 1st periodic verification of the Programme of Activities (which includes CPA-1, CPA-2, CPA-3 and CPA-4)

“Nepal Biogas Support Program-PoA”

with regard to the relevant requirements for CDM Programme of Activities. The verifiers have reviewed the implementation of the monitoring plan (MP) in the registered CDM POA-DD and CPA-DD (s).

GHG data for the monitoring period was verified in detailed manner applying the set of requirements, audit practices and principles as required under the Validation and Verification Standard version 7.0^{VVS/} of the UNFCCC.

This report summarizes the findings and conclusions of this 1st periodic verification of POA of the above mentioned UNFCCC registered Programme of Activities (PoA).

1.1. Objective

The objective of the verification is the review and ex-post determination by an independent entity of the GHG emission reductions. It includes the verification of the:

- implementation and operation of the project as given in the POA-DD/CPA-DD (s), or any approved revised PoA-PDD and CPA-DD
- compliance with applied approved methodology and the provisions of the monitoring plan,
- data given in the monitoring report by checking the monitoring records, the emissions reduction calculation and supporting evidence,
- accuracy of the monitoring equipment is not applicable for this project
- quality of evidence,
- significance of reporting risks and risks of material misstatements

1.2. Scope

The verification of this registered project is based on the validated Programme of Activities design document (PoA-DD); validated Component Project Activity Design Document (CPA-DD)^{/PoA/VAL/}, the monitoring report^{/MR/}, emission reduction calculation spread sheet^{/ER/}, supporting documents made available to the verifier and information collected through performing interviews and during the on-site assessment. Furthermore publicly available information was considered as far as available and required.

The verification is carried out on the basis of the following requirements, applicable for this CDM PoA:

- Article 12 of the Kyoto Protocol^{/KP/},



-
- guidelines for the implementation of Article 12 of the Kyoto Protocol as presented in the Marrakech Accords under decision 3/CMP.1^{/MA/}, and subsequent decisions made by the Executive Board and COP/MOP,
 - other relevant rules, including the host country legislation,
 - CDM Validation and Verification Standard^{/VVS/},
 - monitoring plan as given in the registered POA-DD, CPA-DD^{/PoA/ /VAL/},
 - Approved CDM Methodology.

2. GHG PROJECT DESCRIPTION

2.1. Technical Project Description

The following description of the programme as per webhosted monitoring report (for CPA-1, CPA-2, CPA-3 and CPA-4) and registered PoA-DD was verified:

The PoA involves the implementing household biogas applications at individual household in Nepal. These applications displace firewood with biogas from animal waste and human excreta. The biogas is used as a fuel for cooking. Following the methodological guidance under Programme of Activities (PoA), only the replacement of non-renewable biomass (NRB) is counted as emission reduction under the Clean Development Mechanism (CDM) for this project.

Target group under the BSP are rural households who currently use non-renewable biomass (firewood). The BSP is centrally managed by Alternative Energy Promotion Centre (AEPIC) with the support of Biogas Sector Partnership Nepal (BSP-NEPAL), the implementing agency of the AEPIC. AEPIC is a public entity that executes all renewable/alternative energy programs in Nepal including BSP. Its main objectives are disseminating and promoting renewable energy technologies and mitigating environmental degradation. AEPIC is responsible for administrating the government subsidy, coordination with all relevant stakeholders and monitoring BSP-NEPAL. AEPIC is the coordinating and managing entity of this PoA.

The information presented in the PoA documents on the technical design is consistent with the actual planning and implementation of the Programme of Activity Design Document (PoA-DD) and Component Project Activity Design Document (CPA-DD) confirmed in the following ways:

- A review of data and information (refer table reference no. 7.1);
- An on-site visit^{/PHOTO/IM/} 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

In conclusion, validation team confirms that the PoA project description, as included in the monitoring report for CPA-1, CPA-2, CPA-3 and CPA-4 are sufficiently accurate and complete in order to comply with the requirements of the CDM.

The key parameters of the project are given in Table 2-1:

Table 2-1: Technical data of the Biodigester installed in PoA and CPA (s)

Parameter	Unit	Value
Model No. of Bio-Digester	n/a	GGC 2047
Capacity of Bio-Digester	m ³	2, 4, 6, 8 and 10
Type of Bio-Digester	n/a	closed underground container made of concrete or other materials

2.2. Project Location

The details of the project location are given in Table 2-2:

Table 2-2: Project Location

No.	Project Location
Host Country	Nepal
Region:	various locations across Nepal
Project location address:	Nepal
Latitude:	North 26.20 degree to North 30.45 degree
Longitude:	East 80.07 degree to East 88.20 degree

2.3. Project Verification History

Essential events since the registration of the project are presented in the following Table 2-3.

Table 2-3: Status of previous Monitoring Periods

#	Item	Time	Status
1	1 st Monitoring period	31/01/2013-31/07/2014	Ongoing
n	Renewal of Crediting Period	Not applicable	Not applicable

An overview of all Post Registration Changes is given in the following table.

Table 2-4: Overview Post Registration Changes

#	Applicable from – to / as of	MP	Type of post registration change ¹⁾	Description	Status ²⁾ / Date
1	N/A		TDfrMP	N/A	Not applicable
2	N/A		TDfMM	N/A	Not applicable
3	For CPA-1	1 st MP	CrCPA-DD	Under CPA-1 corrections in the ecological zones of biogas digesters implemented are required. Out of the 20,000 digesters (10,011 in terai, 9,873 in hills and 116 in remote hill) reported during registration. As verified by verification team it was noted that there have been some cross posting of ecological zones	Acceptance (by DOE)

#	Applicable from – to / as of	MP	Type of post registration change ¹⁾	Description	Status ²⁾ / Date
				in the spreadsheet communicated during the registration of the PoA/CPA inclusion. Hence a correction is proposed for CPA-1 for which the number and identity of the digesters will remain the same however, they are distributed as 10,955 in Terai, 8,940 in Hills and 105 in Remote Hills. The rearrangement of the digesters across the ecological zones is presented in section A.3 (CPA-1) above. The rearrangement of the digesters doesn't involve any changes in the CPA threshold and scale of the CPA. However, there is a slight revision in the ex-ante emission estimation (from 61,510 tCO ₂ e to 61,889 tCO ₂ e) as the rearrangement of the digesters triggered the revision in emission reduction in each ecological zone category	
4	N/A		PCfrMP	N/A	Not applicable
5	N/A		PCfMM	N/A	Not applicable
6	N/A		CoPD	N/A	Not applicable

- ¹⁾ TDfrMP : Temporary deviation from registered monitoring plan
TDfMM : Temporary deviation from the monitoring methodology
CrCPA : Corrections to the registered CPA-DD
PCfrMP : Permanent changes from registered Monitoring Plan
PCfMM : Permanent changes from Monitoring Methodology
CoPD : Changes to the project design of a registered POA/CPA
²⁾ Approval (by EB) or Acceptance (by DOE)

3. METHODOLOGY AND VERIFICATION SEQUENCE

3.1. Verification Steps

The verification consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- Publication of the monitoring report
- A desk review of the Monitoring Report^{/MR/} submitted by the client and additional supporting documents with the use of customised verification protocol^{/CPM/} according to the Validation and Verification Standard^{/VVS/},
- Verification planning,
- On-Site assessment,
- Background investigation and follow-up interviews with personnel of the project developer and its contractors,
- Draft verification reporting
- Resolution of corrective actions (if any)
- Final verification reporting
- Technical review
- Final approval of the verification.

3.2. Contract review

To assure that

- the project falls within the scopes for which accreditation is held,
- the necessary competences to carry out the verification can be provided,
- Impartiality issues are clear and in line with the CDM accreditation requirements

a contract review was carried out before the contract was signed.

3.3. Appointment of team members and technical reviewers

On the basis of a competence analysis and individual availabilities a verification team, consisting of one team leader and 03 additional team members, was appointed.

The list of involved personnel, the tasks assigned and the qualification status are summarized in the Table 3-1 below.

Table 3-1: Involved Personnel

	Name	Company	Function ¹⁾	Qualification Status ²⁾	Scheme competence ³⁾	Technical competence ⁴⁾	Verification competence ⁵⁾	Host country Competence	On-site visit
☒ Mr. ☐ Ms.	Pankaj Patel	TUV India Pvt. Ltd.	TL	LA	☒	-	☒	☒	☐
☒ Mr. ☐ Ms.	Govindarajan Ezhilarasu	TUV India Pvt. Ltd.	TM/TE _{A)}	SA	☒	1.2	☒	☒	☒
☒ Mr. ☐ Ms.	Indrapal Parmar	TUV India Pvt. Ltd.	TM/TE _{A)}	A	☒	1.2	☒	☒	☒
☒ Mr. ☐ Ms.	B. J. Mohinder Amarnath	TUV India Pvt. Ltd.	TM/TE _{A)}	SA	☒	1.2	☒	☒	☐
☐ Mr. ☐ Ms.					☐		☐	☐	☐
☐ Mr. ☐ Ms.			TR ^{B)}		☒		☒	☐	-
☐ Mr. ☐ Ms.			OR ^{B)}	T	☐		☐	☐	-
☒ Mr. ☐ Ms.	Kunal Rami	TN CERT GmbH	TR ^{B)} /F _{A^{B)}}	SA	☒	1.2	☒	☐	-

¹⁾ TL: Team Leader; TM: Team Member, TR: Technical review; OT: Observer-Team, OR: Observer-TR; FA: Final approval

²⁾ GHG Auditor Status: A: Assessor; LA: Lead Assessor; SA: Senior Assessor; T: Trainee; TE: Technical Expert

³⁾ GHG auditor status (at least Assessor)

⁴⁾ As per S01-MU03 or S01-VA070-A2 (such as 1.1, 1.2, ...)

⁵⁾ In case of verification projects

^{A)} Team Member: GHG auditor (at least Assessor status), Technical Expert (incl. Host Country Expert or Verification Expert), not ETE

^{B)} No team member

All team members contributed to the review of documents, the assessment of the POA and/or CPA and to the preparation of this report under the leadership of the team leader.

Technical experts contributed to the assessment of special aspects of the POA and CPA (s), e.g. technical or host country aspects.

Statements of competence for the above mentioned team members are enclosed in annex 2 of this report.

3.4. Publication of the Monitoring Report

In accordance with the CDM M&P (§ 62) the draft monitoring report, as received from the project participants, has been made publicly available on the dedicated UNFCCC CDM website prior to the verification activity commenced. Comments received are taken into account in the course of the verification, if applicable.

3.5. Verification Planning

In order to ensure a complete, transparent and timely execution of the verification task the team leader has planned the complete sequence of events necessary to arrive at a substantiated final verification opinion.

Various tools have been established in order to ensure an effective verification planning.

Risk analysis and detailed audit testing planning

For the identification of potential reporting risks and the necessary detailed audit testing procedures for residual risk areas table A-1 is used. The structure and content of this table is given in Table 3-2 below.

Table 3-2: Table A-1; Identification of verification risk areas

Table A-1: GHG calculation procedures and management control testing / Detailed audit testing of residual risk areas and random testing				
Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing performed	Conclusions and Areas Requiring Improvement (including Forward Action Requests)
<i>The following potential risks were identified and divided and structured according to the possible areas of occurrence.</i>	<i>The potential risks of raw data generation have been identified in the course of the monitoring system implementation. The following measures were taken in order to minimize the corresponding risks. The following measures are</i>	<i>Despite the measures implemented in order to reduce the occurrence probability the following residual risks remain and have to be addressed in the course of every verification</i>	<i>The additional verification testing performed is described. Testing may include:</i> - Sample cross checking of manual transfers of data - Recalculation - Spreadsheet 'walk throughs' to check links and equations - Inspection of calibration and maintenance	<i>Having investigated the residual risks, the conclusions should be noted here. Errors and uncertainties are highlighted.</i>

Table A-1: GHG calculation procedures and management control testing / Detailed audit testing of residual risk areas and random testing

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing performed	Conclusions and Areas Requiring Improvement (including Forward Action Requests)
	<i>implemented:</i>		<i>records for key equipment</i> <i>- Check sampling analysis results</i> <i>Discussions with process engineers who have detailed knowledge of process uncertainty/error bands.</i>	

The completed table A-1 is enclosed in Annex 1 (table A-1) to this report.

Project specific periodic verification checklist

In order to ensure transparency and consideration of all relevant assessment criteria, a project specific verification protocol has been developed. The protocol shows, in a transparent manner, criteria and requirements, means and results of the verification. The verification protocol serves the following purposes:

- It organises, details and clarifies the requirements a CDM project is expected to meet for verification
- It ensures a transparent verification process where the verifying DOE documents how a particular requirement has been proved and the result of the verification.

The basic structure of this project specific verification protocol for the periodic verification is described in Table 3-3.

Table 3-3: Table A-2; Structure of the project specific periodic verification checklist

Table A-2: Periodic verification checklist

Checklist Item	Reference	Verification Team Comments	Draft Conclusion	Final Conclusion
The checklist items in Table A-2 are linked to the various requirements the monitoring of the project should meet. The checklist is organised in various sections as per the requirements of the topic and the individual project activity. It further includes guidance for the verification team.	Gives reference to the information source on which the assessment is based on.	The section is used to elaborate and discuss the checklist item in detail. It includes the assessment of the verification team and how the assessment was carried out. The reporting requirements of the VVS shall be covered in this section.	Assessment based on evidence provided if the criterion is fulfilled (OK), or a CAR, CL or FAR (see below) is raised. The assessment refers to the draft verification stage.	In case of a corrective action or a clarification the final assessment at the final verification stage is given.

The periodic verification checklist (verification protocol) is the backbone of the complete verification starting from the desk review until final assessment. Detailed assessments and findings are discussed within this checklist and not necessarily repeated in the main text of this report.

The completed verification protocol is enclosed in Annex 1 (table A-2) to this report.

3.6. Desk review

During the desk review all documents initially provided by the client and publicly available documents relevant for the verification were reviewed. The main documents are listed below:

- the last revision of the POA-DD, CPA-DD including the monitoring plan^{/PoA/}
^{/VAL/},
- the last revision of the validation report^{/VAL/},
- documentation of previous verifications^{/VER/},
- the monitoring report, including the claimed emission reductions for the project^{/MR/},
- the emission reduction calculation spreadsheet^{/ER/}.

Other supporting documents, such as publicly available information on the UNFCCC website and background information were also reviewed.

3.7. On-site assessment

As most essential part of the verification exercise it is indispensable to carry out an inspection on site in order to verify that the project is implemented in accordance with the applicable criteria. Furthermore the on-site assessment is necessary to check the

monitoring data with respect to accuracy to ensure the calculation of emission reductions. The main tasks covered during the site visit include, but are not limited to:

- The monitoring data were checked completely.
- An assessment of the implementation and operation of the registered POA as per the registered POA-DD, CPA-DD or any approved revised POA-DD, CPA-DD;
- A review of information flows for generating, aggregating and reporting the monitoring parameters;
- The data aggregation trails were checked via spot sample down to the level of the meter recordings; as applicable
- Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the POA-DD, CPA-DD;
- A cross check between information provided in the monitoring report and data from other sources site visit and document review or similar data sources;
- A check of the observations of monitoring practices against the requirements of the POA-DD, CPA-DD and the selected methodology and corresponding tool(s), where applicable;
- A review of calculations and assumptions made in determining the GHG data and emission reductions;
- An identification of quality control and quality assurance procedures^{/QC/IMS/ISO/} in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters

Before and during the on-site visit the verification team performed interviews with the project participants to confirm selected information and to resolve issues identified in the document review.

Representatives of Alternative Energy Promotion Centre (AEPC) including the operational staff of the plant were interviewed. The main topics of the interviews are summarised in Table 3-4.

Table 3-4: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
Projects & Operations Personnel; Alternative Energy Promotion Centre (AEPC)	- General aspects of the project - Technical equipment and operation - Changes since validation / previous verification - Monitoring and measurement equipment - Remaining issues from validation/ previous verification - Calibration procedures - Quality management system^{/QC/ISO/}

Interviewed Persons / Entities	Interview topics
	- Involved personnel and responsibilities - Training and practice of the operational personnel - Implementation of the monitoring plan - Monitoring data management - Data uncertainty and residual risks - GHG emission reduction calculation - Procedural aspects of the verification - Maintenance - Environmental aspects

The list of interviewees is included in chapter 7.4.

3.8. Draft verification reporting

On the basis of the desk review, the on-site visit, follow-up interviews and further background investigation the verification protocol is completed. This protocol together with a general project and procedural description of the verification and a detailed list of the verification findings form the draft verification report. This report is sent to the client for resolution of raised CARs, CLs and FARs.

3.9. Resolution of CARs, CLs and FARs

Nonconformities raised during the verification can either be seen as a non-fulfilment of criteria ensuring the proper implementation of a project or where a risk to deliver high quality emission reductions is identified.

Corrective Action Requests (CARs) are issued, if:

- Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
- Issues identified in a FAR during validation or previous verifications requiring actions by the project participants to be verified during verification have not been resolved.

The verification team uses the term Clarification Request (CL), which is issued if:

- information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

Forward Action Requests (FAR) indicate essential risks for further periodic verifications. Forward Action Requests are issued, if:

- the monitoring and reporting require attention and / or adjustment for the next verification period.

For a detailed list of all CARs, CLs and FARs raised in the course of the verification pl. refer to chapter 4.

3.10. Final reporting

Upon successful closure of all raised CARs and CLs the final verification report including a positive verification opinion can be issued. In case not all essential issues could finally be resolved, a final report including a negative verification opinion is issued.

The final report summarizes the final assessments w.r.t. all applicable criteria.

3.11. Technical review

Before submission of the final verification report a technical review of the whole verification procedure is carried out. The technical reviewer is a competent GHG auditor being appointed for the scope this project falls under. The technical reviewer is not considered to be part of the verification team and thus not involved in the decision making process up to the technical review.

As a result of the technical review process the verification opinion and the topic specific assessments as prepared by the verification team leader may be confirmed or revised. Furthermore reporting improvements might be achieved.

3.12. Final approval

After successful technical review an overall (esp. procedural) assessment of the complete verification will be carried out by a senior assessor located in the accredited premises of TÜV NORD.

After this step the request for issuance can be started.

4. VERIFICATION FINDINGS

In the following paragraphs the findings from the desk review of the monitoring report^{/MR/}, the calculation spreadsheet^{/ER/}, POA-DD, CPA-DD^{/PoA/ /VAL/}, the Validation Report^{/VAL/} and other supporting documents, as well as from the on-site assessment and the interviews are summarised.

The summary of CAR, CL and FAR issued are shown in Table 4-1:

Table 4-1: Summary of CAR, CL and FAR

Verification topic	No. of CAR	No. of CL	No. of FAR
A–Description of POA and CPA (s)	03	0	0
B–Implementation of POA and CPA (s)	01	0	0
C–Description of monitoring system	02	0	0
D–Data and parameters	02	0	0
E - Calculation of Emission Reductions	00	0	0
SUM	08	00	00

The following tables include all raised CARs, CLs and FARs and the assessments of the same by the verification team. For an in depth evaluation of all verification items it should be referred to the verification protocols (see Annex).

Finding	CAR A1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Section A.1 of the webhosted MR doesn't include Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods etc. Refer F-CDM-FORM, Attachment, A.1 General information on CPA reference number, title and inclusion date valid for this monitoring period is missing in the webhosted MR		

Finding	CAR A1		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the MR is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	The relevant information as per F-CDM-FORM, section A.1 are given in section D.1 of MR. For clear understanding, those relevant information on PoA and CPAs are also summarized in section A.1 of revised MR.		
	☒ Changes in MR	Section(s): A.1	New version No.: 2.0
	☐ Changes in XLS	Worksheet(s):	New version No.:
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Section A.1 of the revised monitoring report ^{/MR/} is now includes the relevant dates for the project activity (e.g. construction, commissioning, continued operation periods etc.) and general information w.r.t to CPA included in the current monitoring period. Revised MR ^{/MR/} is checked by verification team and found to be corrected. Thus, it is concluded by verification team that the section A.1 is in line with F-CDM-FORM, Attachment A.1. CAR is closed.		
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	CAR A2		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In section C, page 7/35 of the webhosted monitoring report refers to section A.4.4.1 for the details on the avoidance of the double counting of the Biodigesters installed in each CPA for the current monitoring period. However, section A.4.4.1 doesn't include as such details on unique identification numbers of Biodigesters		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the MR is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	In section C of MR, the section A.4.4.1 referred is of PoA DD for the details on avoidance of double counting which mentions on unique identification of the biogas digester. So, the corresponding sentence given in the section C of MR is rephrased in revised MR ^{/MR/} (refer page 13 of PoA DD).		
	☒ Changes in MR	Section(s): C	New version No.: 2.0
	☐ Changes in XLS	Worksheet(s):	New version No.:

Finding	CAR A2
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Sentence as mentioned in section C of the monitoring report is now revised line with the information included in registered PoA-DD document. Further, verification team has checked the unique identification number of the Biodigester during the site visit on random basis from the database^{/BSPDB/} maintained by client. Thus, it is concluded by verification team that the location of the project activity is correct and in line with the F-CDM-FORM, Attachment A.2. CAR is closed.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	CAR A3		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Section A.4 of the webhosted MR doesn't include the version of the applicable CDM methodology and relevant EB decisions applicable for the project. Refer F-CDM-FORM, attachment, A.4.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the MR is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	The information is included in the corrected MR. Further to the correction requested by the DOE, there are several corrections of editorial nature that have been made in different parts of the MR.		
	☒ Changes in MR	Section(s): A.4	New version No.:2.0
	☐ Changes in XLS	Worksheet(s):	New version No.:
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Section A.4 of the revised MR ^{/MR/} now includes reference to the applicable version(s) of relevant methodological tools and relevant EB decisions in line with F-CDM-FORM, Attachment A.4. Revised MR ^{/MR/} is checked by verification team and found to be corrected in this respect. CAR is closed now.		
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	CAR B1
Classification	☒ CAR ☐ CL ☐ FAR

Finding	CAR B1		
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	As per the information mentioned in section B.2.2 of the webhosted monitoring report it is found by verification team that in registered CPA Ref. No. 9572-0001 titled “Nepal Biogas Support Program-CPA 1: 20,000 digesters.” (Included on 31 Jan 13) the information regarding the distribution of Biodgiesters across the ecological zones in Nepal is wrongly included. Therefore, for the current MP need for PRC corrections has been identified for CPA-1 as per paragraph 13.8.3.1 of CDM project standard EB 79 annex-3		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the MR is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	The issue was also realised by CME/CPA implementer and the same had been communicated to DOE. The package of information pertaining to the PRC of CPA-1 is communicated with this package.		
	☐ Changes in MR	Section(s):	New version No.:
	☐ Changes in XLS	Worksheet(s):	New version No.:
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Verification team has received the revised CPA-DD ^{/CPA-1/} and ER sheet ^{/CPA-1/} for CPA-1 from the client. In revised CPA-DD ^{/CPA-1/} and ER sheet ^{/CPA-1/} ver.15.0 client has now corrected the distribution of digester details in line with the BUS survey ^{/BUS/} . Total number of Biodigesters in this revised CPA remains the same, only distribution of the Biodgiesters was wrongly included at the time of CPA inclusion. Due to this revision in distribution of CPA total estimated reductions (tonnes of CO ₂ e) were also revised/updated correctly. Verification team has checked the revised CPA-DD and ER sheet to confirm that the revision done with respect to Biodigesters information is correct and OK.		
	Further, as CME has revised the CPA-DD and ER sheet therefore in line with post registration changes (PRC) requirement cited via as per paragraph 13.8.3.1 of CDM project standard EB 79 annex-3; DOE is also submitting the validation opinion for the said revision done in the revised CPA-DD and ER sheet for CPA-1 as part of the PRC done by PP/CME.		
	CAR is closed now.		
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	CAR C1
Classification	☒ CAR ☐ CL ☐ FAR

Finding	CAR C1		
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Section C of the monitoring report doesn't include the information regarding the roles and responsibilities of GHG monitoring system as required by F-CDM-FORM, attachment, C and PS para 250. Also, the roles and positions of each person in the GHG data management process are not defined (raw data generation to submission of the final data).		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the MR is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	The information on roles and responsibilities of GHG monitoring systems is incorporated in section C of the revised MR ^{/MR/} .		
	☒ Changes in MR	Section(s): C	New version No.: 2.0
	☐ Changes in XLS	Worksheet(s):	New version No.:
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Section C of the revised MR ^{/MR/} now clearly defines the information on all roles and positions of each person involved in the GHG data management process as stated and implemented in registered monitoring plan. As verified during the site visit no relevant personnel w.r.t. monitoring has been exchanged. Thus it is confirmed by validation team that the roles and responsibilities of personnel involved in GHG monitoring system are correct and in line with F-CDM-FORM, Attachment, C; PS §242. CAR is closed now.		
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	CAR C2		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Section C of the monitoring report is incomplete with respect to the information "Further descriptions on the monitoring plan" of a CPA internal monitoring activities as part of the overarching BSP programme". Refer registered CPA-DD B.6.1 and POA-DD E.7.2.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the MR is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	Section C of the revised monitoring report is updated to include the information on monitoring, conducted annually through the biogas users' surveys for each of the CPA's.		
	☒ Changes in MR	Section(s): C	New version No.: 3.0
	☐ Changes in XLS	Worksheet(s):	New version No.:

Finding	CAR C2
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Section C of the revised MR^{/MR/} ver.3.0 now clearly defines the information on monitoring requirements i.e. digester performance and displacement if Non-renewable biomass for each of the CPA as part of monitoring survey conducted by an independent consultant. Explanation included is now correct and in line with the registered monitoring plan given in POA-DD and CPA-DD. Verification team has verified the same during the site visit interview and review of the survey report (for each CPA) submitted to DOE. Thus it is confirmed by validation team that the information included in section C of the revised MR is correct and in line with the registered PoA-DD and survey reports conducted by client. CAR is closed now.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	CAR D1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	For CPA-3 (2013-14) and CPA-4 (2013-14) distribution of Bio-digesters across the ecological zones of Nepal is not correctly taken from BUS Survey Reports for corresponding year in the MR and ER sheet.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the MR is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	The distribution of Bio-digesters across the ecological zones of Nepal has to be taken according to the corresponding CPA DDs. The information in MR is corrected as per CPA DD. However the distribution of digesters presented in the MR is consistent with the respective CPA-DD; the same in the ER calculation spreadsheet has been corrected.		
	☐ Changes in MR	Section(s):	New version No.:
	☒ Changes in XLS	Worksheet(s):	New version No.: v2
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Verification team has received the revised MR ^{/MR/} and ER sheet ^{/ER/} from PP/CME. Client has now corrected the distribution of Bio-digesters across the all ecological zones of Nepal for CPA-3 (2013-14) and CPA-4 (2013-14). Verification team has checked the BUS survey report submitted by client to confirm that the revision done in the revised MR ^{/MR/} and ER sheet ^{/ER/} w.r.t to CPA-3 and CPA-4 is correct and accurate. Due to said revision done in the ER sheet total emission reduction for the first periodic monitoring period are now updated. Verification team has checked the revised MR ^{/MR/}		

Finding	CAR D1
	and ER sheet ^{ER/} and found it to be correct and accurate. CAR is closed now.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	CAR D2
Classification	☒ CAR ☐ CL ☐ FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In the emission reduction sheet for CPA-1 CPA-2 and CPA-3 the title of the respective sheet includes the wrong number of Bio-digesters. Further, the unit for monitoring parameter "Q _{NRB} " repl. is missing also reference document for monitoring parameter "Ns,r" is missing.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the MR is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	The numbers of Bio-digesters in the title of all respective CPAs are corrected in ER calculation spreadsheet. The unit of "Q _{NRB} " repl. also incorporated in all applicable places in ER calculation spreadsheet. The parameter "Ns,r" is not monitoring parameter but is fixed ex-ante. This is taken from corresponding CPA DDs and a note of reference has been given for the same in the ER calculation spreadsheet.
	☐ Changes in MR Section(s): New version No.: ☒ Changes in XLS Worksheet(s): New version No.: v2
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Verification team has received the corrected revised ER sheet from the client. In revised ER sheet client has now corrected the title of the respective sheet CPA wise. Also, unit of measurement is also included against the monitoring parameter in line with the registered CPA-DD and POA-DD. CAR is closed now.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

5. SUMMARY OF VERIFICATION ASSESSMENTS

The following paragraphs include the summary of the final verification assessments after all CARs and CLs are closed out. For details of the assessments pl. refer to the discussion of the verification findings in chapter 4 and the verification protocol (Annex 1).

5.1. Involved Parties and Project Participants

The following parties to the Kyoto Protocol and project participants are involved in this POA and CPA (s).

Table 5-1: Project Parties and project participants

Characteristic	Party	Project Participant
Non-Annex 1	Nepal	Alternative Energy Promotion Centre (AEPC)
Annex 1	N/A	N/A

5.2. Implementation of the project

During the verification a site visit was carried out. On the basis of this site visit and the reviewed project documentation^{/CR//PCR//BSPDB//BUB/} (like construction progress report and Plant completion progress^{/CR/} for Biodigester installation) it can be confirmed that w.r.t. the realized technology, the project equipments, as well as the monitoring the project has been implemented and operated as described in the registered CPA-DD for all four CPA's involved in the current monitoring period. Details of which is given below:

Co-ordinating and Managing entity/Project Participants:	Alternative Energy Promotion Centre (AEPC)
Title of the PoA:	Nepal Biogas Support Program-PoA
UNFCCC registration No:	9572
Applied Baseline and monitoring methodology:	AMS-I.E. ver. 4 - Switch from Non-Renewable Biomass for Thermal Applications by the User
Title of the CPA:	Nepal Biogas Support Program - CPA 4: 19,970 digesters. Nepal Biogas Support Program - CPA 3: 19,959 digesters. Nepal Biogas Support Program - CPA 2: 19,927 digesters Nepal Biogas Support Program- CPA 1: 20,000 digesters
CPA reference number/ incl. date: CPA-4	9572-0004 / 08 May 14 9572-0003 / 08 May 14

CPA-3	9572-0002 / 08 May 14
CPA-2	9572-0001 / 31 Jan 13
CPA-1	
CPA start date:	
CPA-4	20/02/2011
CPA-3	10/03/2010
CPA-2	19/03/2009
CPA-1	22/06/2007
CPA start of operation:	First digester of CPA-1 implemented on 22/06/2007 First digester of CPA-2 implemented on 19/03/2009 First digester of CPA-3 implemented on 10/03/2010 First digester of CPA-4 implemented on 19/02/2011
CPA implementer	Alternative Energy Promotion Centre (AEPC)
Project Scale:	Small Scale
Location of the CPA:	Nepal
CPA crediting period:	
CPA-4	08 May 2014 - 07 May 2021 (Renewable)
CPA-3	08 May 2014 - 07 May 2021 (Renewable)
CPA-2	08 May 2014 - 07 May 2021 (Renewable)
CPA-1	31 Jan 2013 - 30 Jan 2020 (Renewable)
Reported monitoring Period verified in his verification:	31 January 2013 - 31 July 2014

Verification team has checked the contract signed between AEPC and BSP Nepal for conducting the service of national service provider for installation of biogas plant in households across rural areas of Nepal.

For the first monitoring period of this POA which includes CPA-1, CPA-2, CPA-3 and CPA-4 the project involves installation and operation of biogas plants of sizes 2, 4, 6, 8, and 10 m³, which are in operation at across various districts of Nepal. The construction date of these bio-digesters starts from database maintained by BSP Nepal for all the Biodgiesters^{/BSPDB/}. The construction date is also referred as the operational date is checked from the construction progress report issued by BSP Nepal to AEPC^{/CR/}. The same was checked during the site visit and the random check from the database. Further based on the physical inspection of biogas plants and interviews with the technology suppliers, contractors and household it was confirmed that the technology employed in the project is as same as what is discussed in the registered CDM POA-DD and CPA-DD. In addition, individual households were interviewed during the site visit to confirm the owners name, size of the plant, operational date and operational status of the plant, UID no and other fuel used apart from the Biogas. This is also is in line with the biogas user survey report conducted by surveying agency.

Nevertheless, as project proponent has gone for post registration changes in the registered CPA-DD and corresponding emission reduction sheet for CPA-1 "Corrections that do not affect the project" will be assessed at Annex 3 of this report. Kindly refer annex-3 for further assessment on post registration changes (PRC).

However, during the course of verification process CAR A1 and CAR A2 is raised and closed successfully.

5.3. Project history

During the validation the validating DOE has not raised any issues that could not be closed or resolved during the validation stage. For this purpose no FARs is raised. No such issues were identified for this project. This was confirmed from table 4-1 of the POA validation report^{VAL/}

During the on-site visit and the desk review process, the audit team reviewed different information from the operational system of the project, surveys reports, communications and other internal reports and records in order to identify changes or incidents during the operation of the project.

No events or situations occurred in the monitoring period that impacted the applicability of the methodology and monitoring plan.

Furthermore as this is the 1st periodic verification no issues from former verifications are to be considered.

5.4. Post registration changes

Post registration changes (PRC) applicable for this monitoring period have been observed during the monitoring period with respect to CPA inclusion for CPA-1. CME has gone for corrections that do not affect project design and yes PRC changes are in Appendix 1 of the CDM project standard. Project proponent has submitted the revised CPA-DD and emission reduction sheet for CPA-1. Verification team has checked the revised CPA-DD and emission reduction and confirm that the post registration changes are basically falls under the category “corrections that do not affect the project design” of Appendix 1 PS version 7.0. Therefore, as per PRC requirement client has submitted revised CPA-DD in (i) track-change and (ii) clean version. Based on the revised CPA-DD and ER sheet verification team has provided its validation opinion for the said post registration changes (PRC) as annexure of this verification report.

Validation team Under CPA-1 corrections in the ecological zones of biogas digesters implemented are required. Out of the 20,000 digesters (10,011 in terai, 9,873 in hills and 116 in remote hill) reported during registration. As verified by verification team it was noted that there have been some cross posting of ecological zones in the spreadsheet communicated during the registration of the PoA/CPA inclusion. Hence a correction is proposed for CPA-1 for which the number and identity of the digesters will remain the same however, they are distributed as 10,955 in Terai, 8,940 in Hills and 105 in Remote Hills. The rearrangement of the digesters across the ecological zones is presented in section B.1 (CPA-1) above. The rearrangement of the digesters doesn't involve any changes in the CPA threshold and scale of the CPA. However, there is a slight revision in the ex-ante emission estimation (from 61,510

tCO₂ e to 61,889 tCO₂e) as the rearrangement of the digesters triggered the revision in emission reduction in each ecological zone category.

However, during the course of verification process CAR B1 is raised w.r.t to post registration changes and closed successfully.

5.5. Compliance with the monitoring plan

The monitoring system and all applied procedures are completely in compliance to the registered monitoring plan. Regarding the compliance with the monitoring plan, the verification team reviewed if:

- The monitoring of reductions in GHG emissions resulting from the proposed CDM Programme of Activity (PoA)/CPA were implemented in accordance with the monitoring plan contained in the registered POA-DD/CPA-DD.
- The monitoring plan and the applied methodologies had been properly implemented and followed by the project participants.
- All parameters stated in the monitoring plan, the applied methodologies and relevant CDM EB decisions had been sufficiently monitored and updated.
- The responsibilities and authorities for monitoring and reporting were in accordance with the responsibilities and authorities stated in the monitoring plan.

The monitoring system and all applied procedures are in compliance with the monitoring plan contained in the registered PoA-DD, CPA-DD and the applied methodology AMS-I.E. ver.04, based on the information included in the final monitoring report.

Thus, it is concluded by verification team that the monitoring plan as stipulated in section B.7 of the registered PoA-DD, and is observed to be followed in the project and the description of the monitoring system provided under section C of the revised Monitoring Report^{/MR/} is verified during onsite observation, verification of plant records^{/BUS//ISO/} and interview with the involved personnel in operation and maintenance of the CPA (s) and found to be appropriate by verification team.

5.6. Compliance with the monitoring methodology

The monitoring system is in compliance with the applied monitoring methodology AMS-I.E. ver.04 i.e. "Switch from Non-Renewable Biomass for thermal applications by the user").

The verification team reviewed whether the registered monitoring plan was in accordance with the applied methodology and if any other monitoring aspect of the CPA (s) that is not specified in the methodology was identified.

- The verification team confirmed that the monitoring plan of the validated CDM Programme of Activity (PoA) and CPA is in accordance with the applied approved methodology AMS-I.E. ver.04("Switch from Non-Renewable Biomass for thermal applications by the user") based on the following reasons:
- During the desk review monitoring parameters included in the applied methodology were compared with the ones included in the monitoring plan of the registered PoA-DD and CPA-DD, and they were found consistent.
- During the verification process no need was identified for revision of the monitoring plan.
- No other relevant aspects for monitoring not included in the methodology were identified.
- No deviations from the monitoring methodology were identified during the verification process.

Thus, it is concluded by verification team that the monitoring report and emissions reduction calculations are in line with the requirements of the validated monitoring plan as well as with the applied methodology. Thus, the reporting procedures correctly reflect the requirements of the monitoring plan.

5.7. Monitoring parameters

During the verification all relevant monitoring parameters (as listed in chapter B.7.1 of the CPA-DD) have been verified with regard to the appropriateness of the applied measurement / determination method, the correctness of the values applied for ER calculation, the accuracy, and applied QA/QC measures. The results as well as the verification procedure are described parameter-wise in the project specific verification checklist (Annex I- Verification Protocol).

After appropriate corrections were carried out by the project participant it can be confirmed that all monitoring parameters have been measured / determined without material misstatements and in line with all applicable standards and relevant requirements.

The following data and parameters fixed ex ante or at renewal of crediting period were checked by the verification team to be in line with registered CPA-DD (s):

- (1) Net calorific value of the non-renewable biomass that is substituted; **NCV_{biomass}**
- (2) Emission factor for the projected fossil fuel consumption in the baseline; **EF_{projected_fossil fuel}**
- (3) Fraction of biomass used in the absence of the project activity in year y that can be established as non renewable biomass using nationally approved methods; **f_{NRB,y}**
- (4) Number of digesters in each size category (in m³) and region (Terai, Hill and, if available, Remote Hill or Mountain) implemented under the CPA; **N_{s,r}**

(5) Quantity of woody biomass that is substituted or displaced in tonnes per year and appliance; $Q_{NRB_{repl}}$ and

And there is only single ex-post monitoring parameter required to be monitored is which is “The share of digesters operational (based on the total number implemented using non renewable biomass)”; P as per registered monitoring plan in POA-DD and CPA-DD (s). This monitoring parameter is calculated as the weighted average value across all ecological zones as sourced from the annual biogas users’ survey conis weighted average value across all ecological zones. CPA wise results of BUS surevy are as follows:

CPA Details	Value(s) of monitored parameter ¹	Source of data
CPA-1 (BUS 2012/13)	92.1%	BUS Report 2012/13: CPA-1
CPA-1 (BUS 2013/14)	96.2%	BUS Report 2013/14: CPA-1
CPA-2 (BUS 2013/14)	97.0%	BUS Report 2013/14: CPA-2
CPA-3 (BUS 2013/14)	93.5%	BUS Report 2013/14: CPA-3
CPA-4 (BUS 2013/14)	98.4%	BUS Report 2013/14: CPA-4

Verification team checked the Biogas User Survey (BUS) report for each CPA and confirmed that the value of the monitored parameter is correctly calculated and used for emission reduction calculations.

5.8. Monitoring report

A draft monitoring report was submitted to the verification team by the project participants. The team has made this report publicly available at least 15 days prior to the start of the verification activities. No comments were received.

During the verification, mistakes and needs for clarification were identified. The CME/PP/CPA implementer has carried out the requested corrections so that it can be confirmed that the Monitoring report is complete and transparent and in accordance with the registered POA-DD/CPA-DD (s) and other relevant requirements. Final monitoring report¹ is submitted for the issuance request.

In the process of the verification, CAR A3 was raised and successfully closed. The findings are described in Section 4 of this Report.

¹ weighted average value across all ecological zones i.e. Terai; Hill and Mountain or Remote Hill in Nepal.

5.9. Sampling

5.9.1. Implementation of the sampling plan

The Biogas Users Survey (BUS) intends to monitor the key parameters that were envisaged as monitoring parameters while designing the Program of Activities for individual CPA (s). For the first periodic CDM POA verification four CPA's are included in included. Such parameter mainly includes identification of non-operational biogas plants and assessment of Non Renewable source of biomass.

Summary of main findings out of the Biogas Users Survey (BUS) conducted for CPA-1 (BUS 2012-13); CPA-1 (BUS 2013-14); CPA-2 (BUS 2013-14); CPA-3 (BUS 2013-14) and CPA-4 (BUS 2013-14) is given below:

- **For CPA-1 (2012-13):** Biogas Users' survey, BUS 2012-13 for CPA-1 covers a total sample of 100 households from all 20,000 households (20,000 biogas plants installed in the CPA-1) within the CPA-1 for period 2012-13.
- **For CPA-1 (2013-14):** Biogas Users' survey, BUS 2013-14 for CPA-1 covers a total sample of 89 households from all 20,000 households (20,000 biogas plants installed in the CPA-1) within the CPA-1 for period 2013-14.
- **For CPA-2 (2013-14):** Biogas Users' survey, BUS 2013-14 for CPA-2 covers a total sample of 89 households from all 19,927 households (19,927 biogas plants installed in the CPA-2) within the CPA-1 for period 2013-14.
- **For CPA-3 (2013-14):** Biogas Users' survey, BUS 2013-14 for CPA-3 covers a total sample of 89 households from all 19,959 households (19,959 biogas plants installed in the CPA-3) within the CPA-3 for period 2013-14.
- **For CPA-4 (2013-14):** Biogas Users' survey, BUS 2013-14 for CPA-4 covers a total sample of 89 households from all 19,970 households (19,970 biogas plants installed in the CPA-4) within the CPA-1 for period 2013-14.

Sample size was determined using stratified random sampling in consistent with "Guidelines for sampling and surveys for CDM project activities and programme of activities, Version 02.0 (EB 69 Annex 5)" for biogas plants under CPA-1 to CPA-4. The sampling was performed within the level of precision of 10% and a confidence level of 90%. This is in conformance with §10 of Standard for sampling and surveys for CDM project activities and programme of activities (EB69, Annex 4). The minimum sample sizes required for conducting the present Biogas User Surveys have been estimated with a margin of error not exceeding 10 percent of the population mean. This is in accordance with §10 of EB69 Annex 4. The verification team has checked the sampling approach through the onsite visit interview and also by going through the methodology followed by the surveying entity i.e. **Square One Research and Training**. The sampling method used in all the BUS Survey is in compliance with the "General Guidelines for Sampling and Surveys for Small-Scale CDM Project Activities" EB 50, in effect at the time of the survey design. The approach is also consistent with EB 69, Annex 5.

The samples are allocated in two different ways to maintain the representativeness. First, samples are allocated proportionally to ecological belts and development regions based on proportion of biogas installed in these two areas and Secondly, sample are allocated to size of biogas (2, 4, 6, 8, 10 m³). First the samples were allocated proportionately to the cluster and later the distribution of samples among different size of the digester was ensured. It almost represents the proportion of biogas digester implemented under the CPA (s) of the POA. Verification team checked the BUS report to confirm the correctness of the samples for all CPA's involved in the current monitoring period.

The sample size is calculated from the total population of biogas units with 90/10 confidence/precision level. The same was matched with EB 69 Annex 5. The sampling plan is assessed as part of the BUS report for all the CPA's i.e. CPA-1; CPA-2; CPA-3 and CPA-4. The survey report of 2012-13 and 2013-14 carried out by an independent agency, Square One Research and Training, in 2013 & 2014 and was checked by the verification team. It has been confirmed that the surveys have been done as per EB guidelines i.e. Guidelines for sampling and surveys for CDM project activities and programme of activities, version 02 (EB69, Annex 5).

Results of the sampling for the CPA's included in the current monitoring period are as follows:

CPA Details	Total number of plants under CPA	Total number of sample (n)	Total number of sample (n) after oversampling
CPA-1 (BUS 2012/13)	20000	41	100
CPA-1 (BUS 2013/14):	20000	41	89
CPA-2 (BUS 2013/14):	19927	42	89
CPA-3 (BUS 2013/14):	19959	47	89
CPA-4 (BUS 2013/14):	19970	47	89

Verification team noted that all biogas digesters sold are registered under BSP Nepal database and their performance is monitored through field surveys of a random sample of the installed households. The biogas production of biogas plants is not metered. Through a sample survey, the number of systems out of order has been determined and the performance ratio is calculated by taking the percentage of the sold biogas digesters that are still operating. This is in compliance with the requirements of registered PoA-DD and CPA-DD hence was accepted by DOE.

5.9.2. Sampling approaches during verification

Alternative Energy Promotion Centre (AEPC) i.e. CME has calculated sample size in accordance with the "Guidelines for sampling and surveys for CDM project activities and programme of activities, Version 02.0 (Annex 5 of EB 69)" as discussed in the preceding section.

The VVS requires DOEs to apply sampling /survey in accordance with the “Standard for sampling and surveys for CDM project activities and programme of activities” (version 03.0) Annex 4, EB 69 during their assessments. Verification team calculated sample size for its assessment applying through paragraph 296 of the standards (Annex 4 of EB69). The sample size is conservatively calculated and is kept on a little higher end to cater the need of acceptance sampling as oversampling as required by the standard. Appendix C of the guidance (Annex 5 of EB69) is also applied in order to calculate DOE sample size for Verification.

Sampling approach applied by verification team for cross verification:

In accordance with the §24(a) of Standard for “Sampling and surveys for CDM project activities and programmes of activities” (version 04.1) and based on verification team’s professional judgment, the verification team has chosen a random sample size of 62 households out of the sampled and non-sampled survey conducted for Biodigester for all CPA’s. The selected samples include a randomly selected households located in the Nepal across various ecological zones namely Hill region; Terai region and Mountain or Remote Hill region. Further, the verification team has confirmed the following sampling approach-

- The sample size is based on the Acceptable Quality Level (AQL) of 1% and Unacceptable Quality Level (UQL) as 10% (as per §24b and §25 of Standard for “Sampling and surveys for CDM project activities and programmes of activities” (version 04.1)).
- The sample size considered appropriate as the Table 1 of Standard for “Sampling and surveys for CDM project activities and programmes of activities” (version 04.1) has already provided the sample size for verifying PP’s data to be 61, for AQL=1% and UQL=10%.
- The maximum errors associated with the determination indicated in §25 of Standard for “Sampling and surveys for CDM project activities and programmes of activities” (version 04.1) is considered as 5% for producer’s risk and 5% for consumer’s risk.

Based on the sampling approach the verification team has selected the 62 household’s located in the implemented CPAs of across ecological zones of Nepal. The verification team used the survey forms to get the feedback from individual households during the on-site visit.

The numbers of household or Biodigester sampled in the household were cross verified with the installed BUS survey mentioned in the BSP database confirm the correctness of the data gathered at the time of survey. The result of verification team’s observation based on the chosen sample, are found consistent with the Biodigester database of the CPA implementers. No discrepancy was found during on site visit. Thus, according to the result of verification team’s random sampling as a

part of the on-site visit, it is confirmed that the number of Biodigesters installed as per CPA implementers' BSP database^{/BSP/} records are appropriate. On site assessment includes in particular the cross verification of the ex-post sampling survey back up data to confirm the operational status of the Biodigesters. In line with the requirements of §24 of Standard for "Sampling and surveys for CDM project activities and programmes of activities" (version 04.1), verification team has visited a total of 62 households during the site visit and has found PPs survey records to be acceptable within the limits required as per Table 1 of Standard for "Sampling and surveys for CDM project activities and programmes of activities" (version 04.1) which defines the sample size of 61.

Further, Validation team confirms that the selected samples (as elaborated in the MR) by the project proponent for their monitoring surveys are representative of the population and that the required confidence and precision have been met. This is in line with the requirement of paragraph 21-22 of the sampling Standard.

Validation team's onsite visits of the sampled households further revealed no discrepancies with the PP records included in the monitoring surveys, which was well within the limit of error. Hence, validation team confirms that the sampling size and the method of onsite verification were in line with the requirements of the sampling standard.

The verification team confirms that the monitoring for the verified period has been carried out in accordance with the monitoring plan included in the registered CPA-DD's of respective CPA's and also POA.

Hence sampling approach adopted by DOE during verification is in accordance with Annex 4 and Annex 5 of EB69 and considers the procedure for sampling to be accurate, conservative and following the approved methodology AMS-I.E ver. 04 and the EB guidance for sampling.

5.10. ER Calculation

During the verification mistakes in the ER calculation were identified. Corresponding CARs were raised. A revised ER calculation^{/ER/} was prepared by the CME/PP/CPA implementer and presented to the verification team. All raised issues were addressed appropriately so that all corresponding CARs could be closed out.

Validation team confirms that appropriate methods and formulae for calculating baseline emissions, projects emissions and leakage have been followed. Validation team is of the opinion that all assumptions, emissions factors and default values that were applied in calculations have been justified.

Thus it is confirmed by verification team that the emission reduction (ER) calculation is overall correct.

However, during the course of verification process CAR D1 and CAR D2 are raised and closed successfully.

5.11. Quality Management

Quality Management procedures^{/QC/BUB/IMS/ISO/} for measurements, collection and compilation of data, data storage and archiving, calibration, maintenance and training of personnel^{/TRG/} in the framework of this CDM Programme of Activity (PoA) have been defined and all these parameters were cross checked during onsite visit and interview of client, site personnel and contractors^{/IM01/}. Quality Management system manual^{/ISO/} and QC Manual^{/QC/} were checked. The QMS manual is found integrated with ISO system. The procedures defined can be assessed as appropriate for the purpose. No significant deviations thereof have been observed during the verification.

The monitoring system covers:

1. organizational structure^{/ORG/};
2. internal audits procedures^{/IMS/};
3. training plan^{/TRG/};
4. handling data procedures;
5. data collection, analysis and calculation procedures^{/SUR/};
6. data checking and storage procedures^{/SUR/};
7. roles and responsibilities.

The verification team was able to check the consistency of the procedures during the site visit interviews and document review during the site visit which includes:

- a) Plant Completion report; Database maintained by BSP Nepal for all the Biogas plants;
- b) Biogas plant owners/user's booklet issued by AEPC;
- c) Management system certificate;
- d) Field Trip Report Quality Control and Monitoring Department by BSP Nepal;
- e) Training provided by AEPC person and consultant team (responsible for BUS Survey) to the enumerators^{/TRG/};
- f) Quality Standard manual prepared by BSP Nepal for the construction of Biogas plant in Nepal;
- g) Contract for the operation of the AEPC/NRREP NSP/RSC signed between AEPC and BSP Nepal for conducting the service of National Service provider for AEPC;
- h) Biogas User's Survey for the year 2012-13 (for CPA-1) and 2013-14 applicable for CPA-1 to CPA-4;

- i) Survey Questionnaire used by survey agency for the BUS Survey;
- j) Quality Standard manual prepared by BSP Nepal for the construction of Biodigester in Nepal dated 2010 (Given to the companies and or end user)

Thus, it is concluded by verification team that the GHG data monitoring system are assessed as appropriate and all the monitoring procedures have been fully integrated in the project participant's quality management system there by confirming to VVS, § 252 (a) ver.7.0

However, during the course of verification process CAR C1 and CAR C2 are raised and closed successfully.

5.12. Actual emission reductions during the first commitment period and the period from 1 January 2013 onwards

The MR includes actual ER values achieved up to 31 December 2012 and actual values achieved from 1 January 2013 onwards as follows:

Table 5-2: Emission reductions before and after the end of 2012

	until 2012-12-31 ¹⁾	from 2013-01-01 ¹⁾	Sum
Emission reductions [tCO _{2e}]	N/A	139,197 tCO _{2e}	139,197 tCO _{2e}

¹⁾ Both days included

5.13. Comparison with ex-ante estimated emission reductions

The MR includes a comparison of the calculated actual emission reductions with the ex-ante calculated values in the registered PoA-DD and CPA-DD.

The calculated value was found to be approximately near to the ex-post determined value, thus no further justification was required. However, this marginal variation is due to change in the operational status of the Biodigesters in CPA-1 (2012/13 and 2013/14) and for CPA-2, CPA-3, CPA-4 (2013/14). Verification team has checked the results of the all four Biogas Users' Survey reports conducted for these CPA's for the current monitoring period to confirm that the emission reduction as presented for CPA-1, CPA-2 CPA-3 and CPA-4 are correct and accurate.

5.14. Overall Aspects of the Verification

All necessary and requested documentation was provided by the project participants so that a complete verification of all relevant issues could be carried out.

Access was granted to all installations of the plant which are relevant for the project performance and the monitoring activities.

No issues have been identified indicating that the implementation of the CPA (s) and the steps to claim emission reductions are not compliant with the UNFCCC criteria and relevant guidance provided by the COP/CMP and the CDM EB (clarifications and/or guidance).

5.15. Hints for next periodic Verification

No FARs was raised during the course of this (first) verification.

6. VERIFICATION AND CERTIFICATION STATEMENT

Alternative Energy Promotion Centre (AEPC) has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 1st periodic verification of the project: "Nepal Biogas Support Program-PoA", with regard to the relevant requirements for CDM Programme of Activity (PoA) and CPA. The project reduces GHG emissions due to installation of biogas plants and decreased fuel consumption. This verification covers the period from 31/01/2013 to 31/07/2014 (including both days).

In the course of the verification 09 Corrective Action Requests (CAR) were raised and successfully closed. Furthermore no Clarification Requests (CL) and FARs are raised to improve the monitoring system in the future. The verification is based on the draft monitoring report, revised monitoring report, the monitoring plan as set out in the registered POA-DD, CPA-DD, the validation report, emission reduction calculation spreadsheet and supporting documents made available to the TÜV NORD JI/CDM CP by the project participant.

As a result of this verification, the verifier confirms that:

- all operations of the project are implemented and installed as planned and described in the validated project design document.
- the monitoring plan is in accordance with the applied approved CDM methodology, i.e., AMS-I.E. ver. 4
- the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately.
- the monitoring system is in place and functional. The project has generated GHG emission reductions.

As the result of the 1st periodic verification, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. TÜV NORD JI/CDM CP herewith confirms that the project has achieved emission reductions in the above mentioned reporting period as follows:

Emission reductions: **139,197** t CO_{2e}

Vadodara, 24/02/2015



Mr. Pankaj Patel

TÜV NORD JI/CDM Certification
Program
Verification Team Leader

Essen, 24/02/2015



< Final Approval Person >

TÜV NORD JI/CDM Certification
Program
Final Approval

7. REFERENCES

Table 7-1: Documents provided by the project participant(s)

Reference	Document
/AEPC/	Contract for the operation of the AEPC/NRREP NSP/RSC signed between AEPC and BSP Nepal for conducting the service of National Service provider for AEPC includes annex detailed work plan including financial proposal.
/BSPDB/	Database maintained by BSP Nepal for all the Biodigesters including CPA-1 to CPA-4
/BUS/	Biogas User's Survey for the year 2012-13 (for CPA-1) and 2013-14 applicable for CPA-1 to CPA-4.
/BUB/	- Biogas plant owners/user's booklet issued by AEPC. - Plant Handover form signed by Biodigester owner.
/CRI/	- Construction progress report issued by BSP Nepal to AEPC ref. no. BSPN/SA&D/2013/059 dated 05 August 2014. - Plant completion progress report by BSP Nepal
/ERS/	Emission reduction right transfer/sales agreement between Biodigester owner and Construction company.
/ER/	- Emission reduction sheet w.r.t to MR dated 31/07/2014 version 1.0. - Emission reduction sheet w.r.t to MR dated 22/09/2014 version 2.0.
/ISO/	ISO certificate for ISO 9001:2008 issued dated 08/12/2012. Valid till 07/12/2015.
/IMS/	ISO based internal Monitoring i.e. Field Trip Report Quality Control and Monitoring Department by BSP Nepal on sample basis for the Biodigester installed.
/MR/	- Monitoring report of the POA project titled "Nepal Biogas Support Program-PoA" dated 31/07/2014 version 1.0. - Monitoring report of the POA project titled "Nepal Biogas Support Program-PoA" dated 22/09/2014 version 2.0. - Monitoring report of the POA project titled "Nepal Biogas Support Program-PoA" dated 19/02/2015 version 3.0. Details of the CPA's included in the current monitoring period is given as:

Reference	Document		
	Ref	CPA Title	Inclusion date
	9572-0005	<u>Nepal Biogas Support Program – CPA 5: 19,842 digesters</u>	25 Aug 14
	9572-0004	<u>Nepal Biogas Support Program - CPA 4: 19,970 digesters.</u>	08 May 14
	9572-0003	<u>Nepal Biogas Support Program - CPA 3: 19,959 digesters.</u>	08 May 14
	9572-0002	<u>Nepal Biogas Support Program - CPA 2: 19,927 digesters</u>	08 May 14
	9572-0001	<u>Nepal Biogas Support Program- CPA 1: 20,000 digesters.</u>	31 Jan 13
	/ORG/	Organisation Chart for the personnel involved in the GHG monitoring system.	
/Photo/	Still and video photographic evidences during the site visit		
/PCR/	Plant Completion report (generated by Oracle software) by BSP Nepal which includes GPS co-ordinates, technical details of digesters; details of end user/owner, construction date, total cost, subsidy no.; plant code/unique ID.		
/QC/	Quality Standard manual prepared by BSP Nepal for the construction of Biodigester in Nepal dated 2010 (Given to the companies and or end user)		
/SUR/	Survey Questionnaire used by survey agency for the BUS Survey for CPA-1 CPA-2 CPA-3 CPA-4.		
/TRG/	Training provided by AEPC person and consultant team (responsible for BUS Survey) to the enumerators (Annex-4 of the BUS Survey Report).		
/TS/	Quality Standard manual prepared by BSP Nepal for the construction of Biodigester in Nepal dated 2010 (Given to the companies and or end user)		

Table 7-2: Background investigation and assessment documents

Reference	Document
/AMS/	AMS-I.E. ver. 4, "Switch from Non-Renewable Biomass for Thermal Applications by the User"
/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
/CPA-1/	Revised CPA-DD and revised emission reduction sheet ver.15 dated 05/09/2014 for CPA no.1 w.r.t post registration changes (PRC) doesn't require prior approval.

Reference	Document															
/IPCC/	1. 1996 IPCC Guidelines for National Greenhouse Gas Inventories: work book 2. 2006 IPCC Guidelines for National Greenhouse Gas Inventories: work book															
/KPI/	Kyoto Protocol (1997)															
/MA/	Decision 3/CMP. 1 (Marrakesh – Accords)															
/MRT/	Monitoring Report Form (CDM-MR-FORM), Version 4.0															
/PoA/	Registered POA-DD and included CPA-DDs for CDM project: “Nepal Biogas Support Program-PoA” , UNFCCC PoA project reference no 9572 <table><tr><th>Ref</th><th>CPA Title</th><th>Inclusion date</th></tr><tr><td>9572-0004</td><td><u>Nepal Biogas Support Program - CPA 4: 19,970 digesters.</u></td><td>08 May 14</td></tr><tr><td>9572-0003</td><td><u>Nepal Biogas Support Program - CPA 3: 19,959 digesters.</u></td><td>08 May 14</td></tr><tr><td>9572-0002</td><td><u>Nepal Biogas Support Program - CPA 2: 19,927 digesters</u></td><td>08 May 14</td></tr><tr><td>9572-0001</td><td><u>Nepal Biogas Support Program- CPA 1: 20,000 digesters.</u></td><td>31 Jan 13</td></tr></table>	Ref	CPA Title	Inclusion date	9572-0004	<u>Nepal Biogas Support Program - CPA 4: 19,970 digesters.</u>	08 May 14	9572-0003	<u>Nepal Biogas Support Program - CPA 3: 19,959 digesters.</u>	08 May 14	9572-0002	<u>Nepal Biogas Support Program - CPA 2: 19,927 digesters</u>	08 May 14	9572-0001	<u>Nepal Biogas Support Program- CPA 1: 20,000 digesters.</u>	31 Jan 13
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9572-0003	<u>Nepal Biogas Support Program - CPA 3: 19,959 digesters.</u>	08 May 14														
9572-0002	<u>Nepal Biogas Support Program - CPA 2: 19,927 digesters</u>	08 May 14														
9572-0001	<u>Nepal Biogas Support Program- CPA 1: 20,000 digesters.</u>	31 Jan 13														
/PS/	CDM Project Standard (Version 7.0)															
/PCPI/	Clean development mechanism project cycle procedure (Version 07.0)															
/SSI/	- Standard for “Sampling and surveys for CDM project activities and programmes of activities” (version 04.1) - Guidelines for sampling and surveys for CDM project activities and programme of activities (version 03.0)															
/VAL/	- Validation report for CDM PoA: “Nepal Biogas Support Program-PoA”, UNFCCC PoA project reference no 9572 dated 31/01/2014. - Validation reports for all CPAs included in the current monitoring period, Details of the CPA's is given below: <table><tr><th>Ref</th><th>CPA Title</th><th>Inclusion date</th></tr><tr><td>9572-0004</td><td><u>Nepal Biogas Support Program - CPA 4: 19,970 digesters.</u></td><td>08 May 14</td></tr><tr><td>9572-0003</td><td><u>Nepal Biogas Support Program - CPA 3: 19,959 digesters.</u></td><td>08 May 14</td></tr><tr><td>9572-0002</td><td><u>Nepal Biogas Support Program - CPA 2: 19,927 digesters</u></td><td>08 May 14</td></tr></table>	Ref	CPA Title	Inclusion date	9572-0004	<u>Nepal Biogas Support Program - CPA 4: 19,970 digesters.</u>	08 May 14	9572-0003	<u>Nepal Biogas Support Program - CPA 3: 19,959 digesters.</u>	08 May 14	9572-0002	<u>Nepal Biogas Support Program - CPA 2: 19,927 digesters</u>	08 May 14			
Ref	CPA Title	Inclusion date														
9572-0004	<u>Nepal Biogas Support Program - CPA 4: 19,970 digesters.</u>	08 May 14														
9572-0003	<u>Nepal Biogas Support Program - CPA 3: 19,959 digesters.</u>	08 May 14														
9572-0002	<u>Nepal Biogas Support Program - CPA 2: 19,927 digesters</u>	08 May 14														

Reference	Document		
	9572-0001	<u>Nepal Biogas Support Program- CPA 1: 20,000 digesters.</u>	31 Jan 13
/VER/	Not applicable		
/VVS/	CDM Validation and Verification Standard (Version 07.0)		

Table 7-3: Websites used

Reference	Link	Organisation
/DNA-N/	Review of 10-year plan of Government of Nepal http://www.npc.gov.np/uploads/plans/20081228112759.pdf	Government of Nepal
/MoE/	http://www.moen.gov.np/	Ministry of Energy, Government of Nepal
/unfccc/	http://cdm.unfccc.int	UNFCCC
/ipcc/	www.ipcc-nggip.iges.or.jp	IPCC publications

Table 7-4: List of interviewed persons

Reference	Mol ¹		Name	Organisation / Function
/IM01/	V	☒ Mr. ☐ Ms	Raju Laudari	AEPC/ Assistant Director
/IM01/	V	☒ Mr. ☐ Ms	Prem Kumar Pokharel	AEPC/ Program Officer- Climate Change
/IM01/	V	☒ Mr. ☐ Ms	Neelam Sharma Rijal	AEPC/ Program Officer- Carbon Financing
/IM01/	V	☒ Mr. ☐ Ms	Ranjan Gajurel	Biogas Plant User in Nepal
/IM02/	V	☐ Mr. ☒ Ms.	Shiladevi Polidal	Biogas Plant User in Nepal
/IM02/	V	☐ Mr. ☒ Ms.	Lal Bahadur Muktan	Biogas Plant User in Nepal

Reference	Moi ¹		Name	Organisation / Function
//IM02/	✓	☐ Mr. ☒ Ms.	Jay Bahadur Sintang	Biogas Plant User in Nepal
//IM02/	✓	☐ Mr. ☒ Ms.	Laxman Bastola	Manager/Biogas Plant Distributer
//IM02/	✓	☐ Mr. ☒ Ms.	Gopal Basnet	Manager/Biogas Plant Distributer
//IM02/	✓	☐ Mr. ☒ Ms.	Sarashwati Osti	Biogas Plant User in Nepal
//IM02/	✓	☐ Mr. ☒ Ms.	Turna Maya Soti Magar	Biogas Plant User in Nepal
//IM02/	✓	☐ Mr. ☒ Ms.	Netra P. Shrestha	Biogas Plant User in Nepal
//IM02/	✓	☐ Mr. ☒ Ms.	Taradevi Sapkota	Biogas Plant User in Nepal
//IM02/	✓	☐ Mr. ☒ Ms.	Rudramaya Pokhrel	Biogas Plant User in Nepal
//IM02/	✓	☐ Mr. ☒ Ms.	Ghan Shyam Paigahi	Biogas Plant User in Nepal
//IM02/	✓	☐ Mr. ☒ Ms.	Yam P. Acharaya	Biogas Plant User in Nepal
//IM02/	✓	☐ Mr. ☒ Ms.	Pramananda Acharaya	Biogas Plant User in Nepal
//IM02/	✓	☐ Mr. ☒ Ms.	Tulsi Paudel	Biogas Plant User in Nepal
//IM02/	✓	☐ Mr. ☒ Ms.	Prakash Timsina	Supervisor/Biogas Plant Distributer
//IM02/	✓	☐ Mr. ☒ Ms.	Sanoj Dhakal	Supervisor/Biogas Plant Distributer
//IM02/	✓	☐ Mr. ☒ Ms.	Santa Maya Ghale	Biogas Plant User in Nepal
//IM02/	✓	☐ Mr. ☒ Ms.	Anita Ghale	Biogas Plant User in Nepal
//IM02/	✓	☐ Mr.	Asha Ghale	Biogas Plant User in Nepal

Reference	Moi ¹		Name	Organisation / Function
		☒ Ms.		
/IM02/	V	☐ Mr. ☒ Ms.	Kamala Tamang	Biogas Plant User in Nepal
/IM02/	V	☐ Mr. ☒ Ms.	Santu Shrestha	Biogas Plant User in Nepal
/IM02/	V	☐ Mr. ☒ Ms.	Teknath Pandey	Supervisor/Biogas Plant Distributer
/IM02/	V	☐ Mr. ☒ Ms.	Baburam Gautam	Manager /Biogas Plant Distributer

¹⁾ Means of Interview: (Telephone, E-Mail, Visit)

ANNEX

- A1:** Verification Protocol
- A2:** Calibration dates and validity of
installed monitoring equipment
- A3:** Statements of Competence of
involved Personnel

ANNEX1: VERIFICATION PROTOCOL

Table A-1:GHG calculation procedures and management control testing / detailed audit testing of residual risk areas and random testing

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
Raw data generation				
• Installation of measuring equipment • Dysfunction of installed equipment • Maloperation by operational personnel • Downtimes of equipment • Exchange of equipment • Change of measurement equipment characteristic • Insufficient accuracy • Change of technology	• Installation of modern and state of the art equipment • Process control automation • Internal data review • Regular visual inspections of installed equipment • Only skilled and trained personnel operates the relevant equipment • Daily raw data checks • Immediate exchange of dysfunctional equipment • Stand-by duty is	• Inadequate installation / operation of the monitoring equipment • Inadequate exchange of equipment • Change of personnel • Undetected measurement errors • Inappropriateness of Management system procedures w.r.t. monitoring plan requirements (e.g. substitute value strategies) • Non-application of management system procedures • Insufficient accuracy • Inappropriate QA/QC	• Site – visit • Check of equipment • Check of technical data sheets • Check of suppliers information / guarantees • Check of calibration records, if applicable • Check of maintenance records • Counter-check of raw data and commercial data • Check of CDM management system • Check of CDM related procedures	• See Table A-2

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
Accuracy of values supplied by Third Parties	- organized - Training - Internal audit procedures - Internal check of QA/QC measures of involved Third Parties	measures of Third Parties	- Application of CDM management system procedures - Check of trainings - Check of responsibilities - Check of QA/QC documentation / evidences of involved Third Parties	
Raw data collection and data aggregation				
- Wrong data transfer from raw data to daily and monthly aggregated reporting forms - IT Systems - Spread sheet programming - Manual data transmission - Data protection - Responsibilities	- Cross-check of data - Plausibility checks of various parameters. - Appropriate archiving system - Clear allocation of responsibilities - Application of CDM Management system procedures - Usage of standard software solutions	- Unintended usage of old data that has been revised - Incomplete documentation - Ex-post corrections of records - Ambiguous sources of information - Non-application of management system procedures - Manual data transfer mistakes	- Check of data aggregation steps - Counter-calculation - Data integrity checks by means of graphical data analysis and calculation of specific performance figures - Check of management system certification - Check of data archiving system	See Table A-2



Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
	(Spreadsheets) - Limited access to IT systems - Data protection procedures	- Unintended change of spread sheet programming or data base entries - Problems caused by updating/upgrading or change of applied software	Check of application of Management system procedures	
Other calculation parameters				
Emission factors, oxidation factors, coefficients	The values and data sources applied are defined in the POA-DD, CPA-DD and monitoring plan	- Unintended or intended Modification of calculation parameters - Wrong application of values - Misinterpretations of the applied methodology and/ or the POA-DD, CPA-DD - Missing update of applicable regulatory framework (e.g. IPCC values)	- Update-check of regulatory framework - Countercheck of the applied MP in the MR against the methodology and the POA-DD, CPA-DD	See Table A-2
Calculation Methods				

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
- Applied formulae - Miscalculation - Mistakes in spread-sheet calculation	- Advanced calculation and reporting tools - A CDM coordinator is in charge of the CDM related calculations - Usage of tested / counterchecked Excel spreadsheets - Involvement of external consultants	The danger of miscalculation can only be minimized.	- Countercheck on the basis of own calculation. - Spread sheet walk-through. - Plausibility checks - Check of plots	See Table A-2
Monitoring reporting				
- Data transfer to the author of the monitoring report - Data transfer to the monitoring report - Unintended use of outdated versions	- An experienced CDM consultant is responsible for monitoring reporting. - CDM QMS procedures are defined	- The danger of data transfer mistakes can only be minimized - Inappropriate application of QMS procedures	- Counter check with evidences provided. - Audit of procedure application	See Table A-2

Table A-2:(Project specific) Periodic Verification Checklist

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
A. Description of the PoA and its component project activity (-ies) CPA (s)				
A.1. Purpose and general description of the POA and CPA (s) (F-CDM-FORM, Attachment, A.1) Check if section A.1 of the MR includes the following: - Purpose of the PA and the measures taken to reduce GHG emissions - Brief description of the installed technology and equipment - Relevant dates for the POA and CPA (e.g. construction, commissioning, continued operation periods etc.) - Total emission reductions achieved in this monitoring period	/MR/ /PoA/ /VAL/	The verification team has checked section A.1 of the MR and confirms that the information provided is complete and correct with regards to the following: ☒ Purpose of the POA and its CPA (s) and the measures taken to reduce GHG emissions ☒ Brief description of the installed technology and equipments ☒ Relevant dates for the POA and its CPA (s) (e.g. construction, commissioning, continued operation periods; CPA inclusion etc) ☒ Total emission reductions achieved in this monitoring period In this context the following findings have been identified: • Relevant dates for the POA and its CPA (s)e.g. construction, commissioning, continued operation periods etc. Refer F-CDM-FORM, Attachment, A.1 • General information on CPA reference number, title and inclusion date valid for this monitoring period is missing in the webhosted MR	CAR-A1	OK
A.1. Location of component project activity (-ies) CPA (s) (F-CDM-FORM, Attachment, A.2) Check if section A.2 of the MR reflects correctly the following: - Host Party(ies)	/MR/ /PoA/ /VAL/ /IM01/ /IM02/	The verification team has checked section A.2 of the MR and confirms by means of comparison with the information given in the POA-DD, CPA-DD and information gathered during the site visit that the information provided is complete and correct with regards to the following: ☒ Host Party(ies)	CAR-A2	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
- Region / State / Province etc. - City / Town / Community etc. - Physical / geographical location (e.g. Latitude and Longitude)		☒ Region / State / Province ☒ City / Town / Community ☐ Physical / Geographical location In this context the following findings have been identified: CAR A2. In section C, page 7/35 of the webhosted monitoring report refers to section A.4.4.1 for the details on the avoidance of the double counting of the Biodgiesters installed in each CPA for the current monitoring period. However, section A.4.4.1 doesn't include as such details on unique identification numbers of Biodgiesters		
A.2. Parties and Project Participants (F-CDM-FORM, Attachment, A.3) Check if section A.3 of the MR includes the following: - All PPs as displayed on the UNFCCC website - A correctly filled table as per the MR template	/MR/ /unfccc/	The verification team has checked section A.3 of the MR as well as the UNFCCC website and confirms that: ☒ all PPs as displayed on the project related UNFCCC website are correctly listed ☒ the table as per the template MR has been correctly filled In this context the following findings have been identified: N/A	OK	OK
A.3. Reference of applied methodology (F-CDM-FORM, Attachment, A.4) Check if section A.4 of the MR correctly describes / includes the following: - Reference to the applicable version of the methodology - Reference to the applicable version(s) of relevant methodological tools - Relevant EB decisions, if applicable	/MR/ /PoA/ /VAL/ /unfccc/	The verification team has checked section A.4 of the MR and confirms by means of comparison with the information given in the POA-DD, CPA-DD and displayed on the UNFCCC website that the information provided is complete and correct with regards to the following: ☒ Number, title and version of the applicable CDM Methodology ☐ Name and version of applicable CDM methodological tools ☐ Relevant EB decisions In this context the following findings have been identified: N/A	CAR A3	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		Section A.4 of the webhosted MR doesn't include the version of the applicable CDM methodology and relevant EB decisions applicable for the project. Refer F-CDM-FORM, attachment, A.4.		
A.4. Crediting period of POA and its CPA (s) (F-CDM-FORM, Attachment, A.5) <i>Check if section A.5 of the MR correctly includes the following:</i> - <i>Start date of the crediting period. In this context please check, if applicable, whether post registration changes to the start date have been accepted by the EB.</i> - <i>Length and type of the crediting period</i>	/MR/ /unfccc/	The verification team has checked section A.5 of the MR and confirms by means of comparison with the information displayed on the UNFCCC website that the information provided is complete and correct with regards to the following: ☒ Start date of the crediting period. ☒ Type and length of the crediting period In this context the following findings have been identified: N/A	OK	OK
A.5. Publication of the Monitoring Report (VVS, § 243) <i>Check if the monitoring report has been made publicly available on the UNFCCC website before the verification commenced.</i> <i>Check if comments have been received and if yes, how they have been addressed.</i>	/unfccc/	The verification team has ensured and confirms by means of checking the respective project information on the UNFCCC website that: ☒ The draft monitoring report, as received from the project participants, has been made publicly available prior to the start of the verification activities. ☒ No comments have been received. In this context the following findings have been identified: N/A	OK	OK
A.6. Compliance with standardized format of the Monitoring Report (VVS, § 247e) <i>Check (only) if the latest applicable MR template has been used. For compliance assessment with the MR guideline pl. refer to the respective MR sections.</i>	/MRT/ /MR/	The verification team has checked all sections of the MR and confirms by means of comparison with the MR template that: ☒ the standardized MR template has been used In this context the following findings have been identified: N/A	OK	OK
B. Implementation of PoA/CPA (s)				

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
B.1. Description of implemented registered PoA and CPA (s) (F-CDM-FORM, Attachment, B.1) Check if section B.1 of the MR correctly describes / includes the following: - Implementation status of the PA - Detailed description of installed technology(ies) / technical processes and equipment applied - Diagrams (where appropriate) - Whether a single report or two MR are prepared; in case of two MR, check that all CPAs are considered in two separate batches	/ MR / / PoA / VAL / / PS / / IM /	The verification team has checked section B.1 of the MR and confirms by means of comparison with the information given in the POA-DD, CPA-DD, the project standard and information gathered during the site visit that: ☐ the description of the implementation status of the PA is in line with the applicable provisions of the project standard ☐ an appropriate description of the installed technology(ies), technical process and equipment incl. diagrams, where applicable, has been included ☒ one single MR has been provided including all CPAs, OR ☐ two different MRs are prepared including all CPAs and information on the reference numbers of the CPAs that are included in each batch In this context the following findings have been identified: As per the information mentioned in section B.2.2 of the webhosted monitoring report it is found by verification team that in registered CPA Ref. No. 9572-0001 titled "Nepal Biogas Support Program- CPA 1: 20,000 digesters." (Included on 31 Jan 13) the information regarding the distribution of Biodigesters across the ecological zones in Nepal is wrongly included. Therefore, for the current MP need for PRC corrections has been identified for CPA-1 as per paragraph 13.8.3.1 of CDM project standard EB 79 annex-3	GAR-B1	

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.										
B.1.1. Initial project implementation (VVS; §§260 a, 261) <i>Assess whether the project has been implemented and operated as per the registered POA-DD, CPA-DD and are all physical features of the project in place?</i> <i>Further focus on the potential phase wise implementation and check the reporting on the corresponding status and starting dates accordingly. Check if the project is still in compliance with the applicability conditions of the methodology. Also, discuss – if applicable – thenecessity of PRC notifications / approvals.</i>	/IM01/ /PoA/ /VAL/	<i>Description:</i> The project is found implemented as per the registered project design document. A total of 79,856 biogas digesters have been installed. <table><thead><tr><th>CPA Title</th><th>Biodigester Installed</th></tr></thead><tbody><tr><td><u>Nepal Biogas Support Program - CPA 4: 19,970 digesters.</u></td><td>19,970</td></tr><tr><td><u>Nepal Biogas Support Program - CPA 3: 19,959 digesters.</u></td><td>19,959</td></tr><tr><td><u>Nepal Biogas Support Program - CPA 2: 19,927 digesters</u></td><td>19,927</td></tr><tr><td><u>Nepal Biogas Support Program- CPA 1: 20,000 digesters.</u></td><td>20,000</td></tr></tbody></table> <i>Verifier’s action:</i> On site assessments including visit of biogas digesters and interviews were conducted and comparison was made with the registered POA-DD and CPA-DD. BSP Nepal Database was checked, which is updated on the basis of commissioning reports sent by the biogas companies. <i>Conclusion:</i> The project has been implemented and operated as per the registered POA-DD, CPA-DD and are all physical features of the project in place. No design change was observed.	CPA Title	Biodigester Installed	<u>Nepal Biogas Support Program - CPA 4: 19,970 digesters.</u>	19,970	<u>Nepal Biogas Support Program - CPA 3: 19,959 digesters.</u>	19,959	<u>Nepal Biogas Support Program - CPA 2: 19,927 digesters</u>	19,927	<u>Nepal Biogas Support Program- CPA 1: 20,000 digesters.</u>	20,000	OK	OK
CPA Title	Biodigester Installed													
<u>Nepal Biogas Support Program - CPA 4: 19,970 digesters.</u>	19,970													
<u>Nepal Biogas Support Program - CPA 3: 19,959 digesters.</u>	19,959													
<u>Nepal Biogas Support Program - CPA 2: 19,927 digesters</u>	19,927													
<u>Nepal Biogas Support Program- CPA 1: 20,000 digesters.</u>	20,000													
B.1.2. Technical equipment changes (VVS; §§260 a, 261) <i>Check if relevant technical equipment of the CPA’s</i>	/IM01/ /PoA/ /VAL/ /PHOTO/	<i>Description:</i> Specifications of key equipment i.e. biogas plants were evidenced during the verification site visit. Key	OK	OK										

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>has been exchanged or modified during the monitoring period. Further ensure that consistent notations of key equipment (meters etc.) in POA-DD, MR and calculation spreadsheet are applied. Consider e.g. interviews with operational personnel, QMS records, maintenance records, instrument specifications.</i> <i>In case of changes, check whether the project is still in line with the registered POA-DD and assure that these changes have been considered in the monitoring report and the emission reduction calculation.</i> <i>In case of post registration changes pl. refer to chapter B.2.</i>	/CR/ /PCR/ /ERS/	equipments at site were found to be consistent with the registered POA-DD, CPA-DD, MR and calculation spreadsheet. <i>Verifier's action:</i> Interview with plant users were conducted and plant maintenance records (Users' Biogas Book) was checked. <i>Conclusion:</i> As evident from site visit observations, interviews and document check that no technical equipment related to project operation is changed		
B.1.3. Operation of the POA and CPA (s) (VVS; §§260 a, 261) <i>Check if relevant operation modes of the CPA (s) have been exchanged or modified during the monitoring period.</i> <i>Consider e.g. interviews with operational personnel, operation log sheets, data management system records.</i> <i>In case of changes, check whether the project is still in line with the registered POA-DD, CPA-DD and assure that these changes have been considered in the monitoring report and the emission reduction calculation.</i> <i>In case of post registration changes pl. refer to chapter B.2.</i>	/IM01/ /PoA/ /VAL/ /BSPDB/	<i>Description:</i> By means of interviews with the biogas plant users, BSP, AEPC and site personnel, site visit observations and review of BSP database it was evidenced, that no relevant operation modes were exchanged or modified within the monitoring period as there were no change reflected in Biogas user manual ad BSP database in current MP. <i>Verifier's action:</i> The BSP database operating in Oracle software in original was checked and has been verified. CME/PP/CPA implementer has also provided soft file of the same to DOE. The verification was also done for the biogas users manuals available with the plant users. <i>Conclusion:</i> No relevant operation modes of all the four CPAs have been exchanged or modified during the monitoring period.	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
B.1.4. Incidents (VVS; §§260 a, 261) <i>Identify if there have been any significant incidents, deviant operation modes and / or downtimes of the equipment?</i> <i>Consider e.g. interviews with operational personnel, operational log sheets, analysis of performance data.</i>	/IM01/ /BUB//BUS/	<i>Description:</i> No abnormal incident /deviant operation mode found as evident during the monitoring period. Out of ~60 households interviewed, all users reported that plants were working. Most of the households interviewed were of the view that gas production goes low in winters. Verification team understands that this reduction in biogas production is attributable to the low microbial degradation rates during winters and hence is reflection of the normal biochemical activities. <i>Verifier's action:</i> Interview with plant users were conducted and plant maintenance records (Users' Biogas Book) was checked. <i>Conclusion:</i> No abnormal incident /deviant operation mode found evident.	OK	OK
B.1.5. Legislation Find out – esp. in the context of methodological requirements - whether relevant legislation with effect on the CPA's in the host country has been changed. Assess, in case of changes, whether consequences for the CPA with regard to relevant CDM requirements have been accounted for. In case of changes data sources shall be referenced.	/IM01/ /MoE/	<i>Description:</i> As per the onsite interviews with the representatives of the project participants and verification of various documents, verification team found that the various aspects of all four CPA w.r.t. the biogas is line with regulatory requirements. Moreover the national/sectoral regulations were verified from Ministry of Energy. There were no changes in the regulation which can affect the emission reduction of the CPA's. Therefore the verification team confirms that the change in legislation has no impact on the POA and CPA (s). <i>Verifier's action:</i> MOE regulations are publically available documents. Also, change in the governing structure of the host country is a known fact.	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<i>Conclusion:</i> No relevant legislation with effect on the CPA's in the host country has been changed.		
B.1.6. Open issues from validation (VVS; § 248) <i>Check (esp. in case of 1st periodic verification) whether there are any open issues indicated in the validation report (e.g. FAR)?</i>	/VAL/	☒ There were no open issues addressed in the validation report ☐ All open issues from the validation have been appropriately addressed. ☐ The following issues related to the validation have not yet been appropriately addressed:	OK	OK
B.1.7. Open issues from previous verification (VVS; §§ 248,319 h) <i>Check in case of further periodic verifications whether there are any open issues indicated in previous verification reports (FAR) and take into consideration the guidance as specified in VVS.</i>	/unfccc/ /PoA/ /VAL/	☐ There were no open issues addressed in the previous verification report ☐ All open issues from the previous verification have been appropriately addressed. ☐ The following issues related to the previous verification have not yet been appropriately addressed: Not applicable as this is the 1 st periodic verification.	NA	OK
B.2. Post registration changes				
B.2.1. Are post registration changes applicable to the proposed PoA and CPA (s)?	/MR/	☐ No, by means of site visit, document check and interview it could be verified that the project is implemented and operated in line with the registered POA-DD, CPA-DD and the applied methodology. (Please proceed with section C) ☒ Yes, post registration changes have been identified and are assessed in detail in the subsequent steps. (Please proceed with B.2.2.)	OK	OK
B.2.2. Temporary deviations from the registered monitoring plan or applied methodology (TDfrMP;	/PS/ /unfccc/	☒ No TDfrMP or TDfMM have been submitted to the UNFCCC prior to the current monitoring period	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.																																							
TDfMM) (F-CDM-FORM, Attachment, B.2.1; VVS§§ 286 - 291) <i>Indicate whether any temporary deviations have been applied during this monitoring period. In cases where approval has been sought from the EB please provide reference. If applied, provide a description of the deviation(s). This should include the reasons for the deviation(s), how it deviates from the monitoring plan and/or applied methodology(ies), the duration for which the deviation(s) is(are) applicable and justification on the conservativeness of the approach. Indicate if the deviation will lead to a reduction in the accuracy and if so, which conservative assumptions and discount factors have been applied. For deviation(s) that require prior approval by the Board, include the date of approval and reference number.</i>		<table border="1"> <tr> <td>☐</td> <td colspan="2">The following TDfMP or TDfMM have been approved or are under approval by the UNFCCC</td> </tr> <tr> <td rowspan="4">1</td> <td>Title</td> <td></td> </tr> <tr> <td>Status</td> <td>☐under approval;☐approved</td> </tr> <tr> <td>Appr.date</td> <td></td> </tr> <tr> <td>Ref. No.</td> <td></td> </tr> <tr> <td rowspan="4">2</td> <td>Title</td> <td></td> </tr> <tr> <td>Status</td> <td>☐under approval;☐approved</td> </tr> <tr> <td>Appr.date</td> <td></td> </tr> <tr> <td>Ref.No.</td> <td></td> </tr> <tr> <td>☐</td> <td colspan="2">During the verification of the current MP no need for a TDfMP or TDfMM has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA</td> </tr> <tr> <td rowspan="3">☐</td> <td colspan="2">An approval of the following TDfMP or TDfMM is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply.</td> </tr> <tr> <td>1</td> <td>Issue:</td> <td></td> </tr> <tr> <td>2</td> <td>Issue:</td> <td></td> </tr> <tr> <td rowspan="2">☐</td> <td colspan="2">The following TDfMP or TDfMM for which appendix 1 of the PS is applicable have been applied:</td> </tr> <tr> <td>1</td> <td>Issue:</td> <td></td> </tr> </table>	☐	The following TDfMP or TDfMM have been approved or are under approval by the UNFCCC		1	Title		Status	☐ under approval; ☐ approved	Appr.date		Ref. No.		2	Title		Status	☐ under approval; ☐ approved	Appr.date		Ref.No.		☐	During the verification of the current MP no need for a TDfMP or TDfMM has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA		☐	An approval of the following TDfMP or TDfMM is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply.		1	Issue:		2	Issue:		☐	The following TDfMP or TDfMM for which appendix 1 of the PS is applicable have been applied:		1	Issue:			
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			2	Issue:														
		<i>In cases of approved TDfrMP or TDfM the EB guidance has been applied as follows:</i> <i>Detailed description and justification each TDfrMP or TDfM for which appendix 1 is applicable:</i> In this context the following findings have been identified: N/A																
B.2.3. Corrections (F-CDM-FORM, Attachment, B.2.2; VVS; §§ 292 - 294) <i>Indicate whether any corrections to project information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report.</i> <i>In cases where the correction(s) and the revised POA-DD, CPA-DD are approved prior to the submission of this monitoring report for request for issuance, provide the approval date and reference number. Otherwise, provide the version number and the completion date of the revised POA-DD, CPA-DD.</i> <i>Please check and report that the corrected information is an accurate reflection of the actual project information and that the corrected parameters are in accordance with the applied methodology and the monitoring plan.</i>	/PS/ /unfccc/	<table><tr><td>☐</td><td colspan="3">During the verification of the current MP no need for corrections has been identified.</td></tr><tr><td>☒</td><td colspan="3">The following corrections have been applied:</td></tr><tr><td>1</td><td>Issue:</td><td colspan="2">Under CPA-1 corrections in the ecological zones of biogas digesters implemented are required. Out of the 20,000 digesters (10,011 in terai, 9,873 in hills and 116 in remote hill) reported during registration. As verified by verification team it was noted that there have been some cross posting of ecological zones in the spreadsheet communicated during the registration of the PoA/CPA inclusion. Hence a correction is proposed for CPA-1 for which the number and identity of the</td></tr></table>			☐	During the verification of the current MP no need for corrections has been identified.			☒	The following corrections have been applied:			1	Issue:	Under CPA-1 corrections in the ecological zones of biogas digesters implemented are required. Out of the 20,000 digesters (10,011 in terai, 9,873 in hills and 116 in remote hill) reported during registration. As verified by verification team it was noted that there have been some cross posting of ecological zones in the spreadsheet communicated during the registration of the PoA/CPA inclusion. Hence a correction is proposed for CPA-1 for which the number and identity of the		CAR-B1	OK
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Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)				Draft Concl.	Final Concl.
					digesters will remain the same however, they are distributed as 10,955 in Terai, 8,940 in Hills and 105 in Remote Hills. The rearrangement of the digesters across the ecological zones is presented in section A.3 (CPA-1) above. The rearrangement of the digesters doesn't involve any changes in the CPA threshold and scale of the CPA. However, there is a slight revision in the ex-ante emission estimation (from 61,510 tCO2 e to 61,889 tCO2e) as the rearrangement of the digesters triggered the revision in emission reduction in each ecological zone category		
		2	Issue:				
		<i>Detailed description and justification each correction:</i> In this context the following findings have been identified: N/A					

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.																																							
B.2.4. Permanent changes from the registered monitoring plan or applied methodology (PCfrMP; PCfMM) (F-CDM-FORM, Attachment, B.2.3; VVS; §§ 295 - 303) <i>Indicate whether any permanent changes from the registered monitoring plan or applied methodologies have been approved during this monitoring period or submitted with this monitoring report.</i> <i>In cases where the change(s) and the revised POA-DD, CPA-DD are approved prior to the submission of this monitoring report for request for issuance, provide the approval date and reference number. Otherwise, provide the version number and the completion date of the revised POA-DD, CPA-DD.</i>	/PS/ /unfccc/	<table><tr><td>☐</td><td colspan="2">No PCfrMP or PCfMM have been submitted to the UNFCCC prior to the current monitoring period</td></tr><tr><td>☐</td><td colspan="2">The following PCfrMP or PCfMM have been approved or are under approval by the UNFCCC</td></tr><tr><td rowspan="4">1</td><td>Title</td><td></td></tr><tr><td>Status</td><td>☐under approval;☐approved</td></tr><tr><td>Appr.date</td><td></td></tr><tr><td>Ref. No.</td><td></td></tr><tr><td rowspan="4">2</td><td>Title</td><td></td></tr><tr><td>Status</td><td>☐under approval;☐approved</td></tr><tr><td>Appr.date</td><td></td></tr><tr><td>Ref.No.</td><td></td></tr><tr><td>☐</td><td colspan="2">During the verification of the current MP no need for a PCfrMP or PCfMM has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA</td></tr><tr><td rowspan="3">☐</td><td colspan="2">An approval of the following PCfrMP or PCfMM is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply.</td></tr><tr><td>1</td><td>Issue:</td><td></td></tr><tr><td>2</td><td>Issue:</td><td></td></tr><tr><td>☐</td><td colspan="2">The following PCfrMP or PCfMM for which appendix 1</td></tr></table>	☐	No PCfrMP or PCfMM have been submitted to the UNFCCC prior to the current monitoring period		☐	The following PCfrMP or PCfMM have been approved or are under approval by the UNFCCC		1	Title		Status	☐ under approval; ☐ approved	Appr.date		Ref. No.		2	Title		Status	☐ under approval; ☐ approved	Appr.date		Ref.No.		☐	During the verification of the current MP no need for a PCfrMP or PCfMM has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA		☐	An approval of the following PCfrMP or PCfMM is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply.		1	Issue:		2	Issue:		☐	The following PCfrMP or PCfMM for which appendix 1		N/A	OK
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☐	An approval of the following PCfrMP or PCfMM is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply.																																										
	1	Issue:																																									
	2	Issue:																																									
☐	The following PCfrMP or PCfMM for which appendix 1																																										

Checklist Item (incl. guidance for the verification team)	Refe- rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.																						
		<table><tr><td></td><td colspan="2">of the PS is applicable have been applied:</td></tr><tr><td>1</td><td>Issue:</td><td></td></tr><tr><td>2</td><td>Issue:</td><td></td></tr></table> <i>In cases of approved PCfrMP or PCfMM the EB guidance has been applied as follows:</i> <i>Detailed description and justification each TDfrMP or TDfM for which appendix 1 is applicable:</i> In this context the following findings have been identified: N/A		of the PS is applicable have been applied:		1	Issue:		2	Issue:																
	of the PS is applicable have been applied:																									
1	Issue:																									
2	Issue:																									
B.2.5. Changes to the project design of the registered PoA and CPA (s) (CoPD) (F-CDM-FORM, Attachment, B.2.4; VVS; §§ 304 - 317) <i>Indicate whether any changes to the project design of the project activity have been approved during this monitoring period or submitted with this monitoring report.</i> <i>In cases where the change(s) and the revised POA-DD, CPA-DD are approved prior to the submission of this monitoring report for request for issuance, provide the approval date and reference number. Otherwise, provide the version number and the completion date of the revised POA-DD, CPA-DD.</i>	/PS/ /unfccc/ /PoA/ /VAL/	<table><tr><td>☐</td><td colspan="2">No CoPD has been submitted to the UNFCCC prior to the current monitoring period</td></tr><tr><td>☐</td><td colspan="2">The following CoPD has been approved or are under approval by the UNFCCC</td></tr><tr><td rowspan="4">1</td><td>Title</td><td></td></tr><tr><td>Status</td><td>☐under approval;☐approved</td></tr><tr><td>Appr.date</td><td></td></tr><tr><td>Ref. No.</td><td></td></tr><tr><td rowspan="3">2</td><td>Title</td><td></td></tr><tr><td>Status</td><td>☐under approval;☐approved</td></tr><tr><td>Appr.date</td><td></td></tr></table>	☐	No CoPD has been submitted to the UNFCCC prior to the current monitoring period		☐	The following CoPD has been approved or are under approval by the UNFCCC		1	Title		Status	☐ under approval; ☐ approved	Appr.date		Ref. No.		2	Title		Status	☐ under approval; ☐ approved	Appr.date		N/A	OK
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			Ref.No.										
		<table><tr><td>☐</td><td colspan="2">During the verification of the current MP no need for a CoPD has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA</td></tr></table>	☐	During the verification of the current MP no need for a CoPD has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA									
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		1	Issue:										
		2	Issue:										
		<i>In cases of approved CoPD the EB guidance has been applied as follows:</i>											
		<i>Detailed description and justification each CoPD for which appendix 1 of the CDM Project Standard is applicable:</i>											
		In this context the following findings have been identified: As per the information mentioned in section B.2.2 of the webhosted monitoring report it is found by verification team that in registered CPA Ref. No. 9572-0001 titled “Nepal Biogas Support Program- CPA 1: 20,000 digesters.” (Included on 31											

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		Jan 13) the information regarding the distribution of Biodgiesters across the ecological zones in Nepal is wrongly included. Therefore, for the the current MP need for PRC corrections has been identified for CPA-1 as per paragraph 13.8.3.1 of CDM project standard EB 79 annex-3.		
C. Description of monitoring system				
C.1. Monitoring Plan – POA-DD, CPA-DD Compliance (VVS, §§ 268-271) Check if the monitoring plan is in accordance with the monitoring plan contained in the registered POA-DD (or any accepted revised MP). Please check esp. if - all parameters stated in the MP of the registered POA-DD, CPA-DD have been monitored and updated as applicable - the monitoring equipment has been controlled and calibrated as per the MP - the monitoring results are consistently recorded as per the approved frequency - QA/QC procedures have been applied in accordance with the MP	/MR/ /PoA/ /VAL/	By means of comparison of the MR with the registered POA-DD, CPA-DD (or any revisions thereof) the verification team has checked whether the MP is in compliance with the registered POA-DD. The outcome is as follows: ☐ The MP is completely in accordance with the last registered/approved version of the POA-DD / MP. In this context the following findings have been identified: However, section C of the monitoring report is incomplete with respect to the information “Further descriptions on the monitoring plan” of a CPA internal monitoring activities as part of the overarching BSP programme”. Refer registered CPA-DD B.6.1 and POA-DD E.7.2.	GAR-G2	OK
C.2. Monitoring Plan – Meth Compliance (VVS, §§ 264-267) Check if the monitoring plan is in accordance with the applied methodology. In case the methodology references applicable tools it has to be ensured that the MP is also compliant with those tools.	/MR/ /PoA/ /VAL/ /T-FFC/ /T-EC/ /T-CAD/	By means of comparison of the MR with the applied CDM methodology and related tools the verification team has checked whether the MP is in compliance with the MP related requirements of the applied methodology. The outcome is as follows: ☒ The MP is completely in accordance with the approved methodology applied by the CDM project (last registered/approved version of the POA-DD)	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Also please specify if monitoring aspects have been identified that are not specified in the methodology but may enhance the level of accuracy and completeness of the monitoring plan – this esp. applies for SSC CPAs.		☒ The MP is completely in accordance with the applied tools which the methodology references. A breakdown of the referenced tools is as follows:		
		1 Title (of the tool) Tool to calculate project or leakage CO ₂ emissions from fossil fuel combustion		
		Version		
		MP compliance ☐ full compliance ☐ findings have been raised ☒ N/A (for MP)		
		2 Title (of the tool) Tool to calculate baseline, project and/or leakage emissions from electricity consumption		
		Version		
		MP compliance ☐ full compliance ☐ findings have been raised ☒ N/A (for MP)		
		3 Title (of the tool) Combined tool to identify the baseline scenario and demonstrate additionality		
		Version		
		MP compliance ☐ full compliance ☐ findings have been raised		

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		☐ ☐ ☐ ☒ N/A (for MP) In this context the following findings have been identified: Regarding aspects that are not specified in the methodology the following issues have been identified which may enhance the level of accuracy and completeness of the MP:N/A		
C.3. Management System (VVS, § 252(a) (iii)) <i>Check if the GHG data monitoring system can be assessed as appropriate.</i> <i>In case reference is made to a (certified) company quality management system, check if all CDM related monitoring procedures have been fully integrated in the project participant's quality management system.</i> <i>In case of a stand-alone system, check how the GHG management system has been implemented and effectiveness is ensured.</i>	/PoA/ /VAL/ /MR/ /QC/ /BUB/ /IMS/ /ISO/	<i>Description:</i> As per the approved monitoring plan contained in the section D.3 the monitoring of Sales Registration is responsibility of BSP-Nepal in coordination with biogas companies. Biogas performance index for biogas companies was checked. Registered POA-DD mentions that BSP-Nepal has prepared a copy of Quality Control Quality manual. The same was checked during on site assessment. Also, BSP-Nepal is ISO-9001/2000 certified and annual surveillance audit is conducted for the same. A copy of the ISO certificate and report of latest surveillance audit covering the monitoring period under consideration has been submitted to the DOE. <i>Verifier's action:</i> Desk review of registered POA-DD, CPA-DD and webhosted MR and other support documents reviewed during the site visit. <i>Conclusion:</i> Thus, it is concluded by verification team that the BSP Nepal is an ISO certified company and the GHG Monitoring and evaluation system in place leading to accurate calculation of the emission reductions for the current monitoring period.	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
C.4. Metering diagram (F-CDM-FORM, Attachment, C; PS §242) <i>Check first if the MR includes a metering diagram showing all relevant monitoring points.</i> <i>Check further if this diagram reflects the actual situation and is in line with the registered POA-DD and with the requirements of the applied methodology.</i>	/PS/ /MR/	<i>Description:</i> The MR does not include a metering diagram. The given CPA's are biogas utilization system and does not require any metering equipment. Hence this checklist section is not applicable. This reflects the actual situation and is in line with the registered POA-DD, CPA-DD and with the requirements of the applied methodology. <i>Verifier's action:</i> desk review of registered POA-DD, CPA-DD and webhosted MR <i>Conclusion:</i> N/A	N/A	OK
C.5. Roles and Responsibilities (F-CDM-FORM, Attachment, C; PS §242) <i>Check if all roles and positions of each person in the GHG data management process are clearly defined and implemented as stated in the monitoring plan. Please consider the complete data trail from raw data generation to submission of the final data. Identify, if relevant personnel w.r.t. monitoring has been exchanged?</i> <i>If so, have appropriate training measures been carried out.</i> <i>In case of changes, assure that the implemented monitoring procedures have not been affected.</i>	/PS/ /PoA/ /VAL/ /MR/	<i>Description:</i> The roles and responsibilities of each person in the GHG data management process are clearly defined in the registered CDM POA-DD prepared by the CME/PP/CPA implementer and however, the webhosted monitoring report doesn't include the information on this. <i>Verifier's action:</i> by means of onsite interview and desk study of registered POA-DD, CPA-DD& webhosted MR. Verification team has interviewed the involved personnel during site visit. All the persons involved in the monitoring process are duly qualified and trained as verified during site visit. <i>Conclusion:</i> Pending closure of the finding.	CAR-C1	OK
C.6. Emergency procedures for the monitoring system (F-CDM-FORM, Attachment, C; PS §242) <i>Check, as appropriate, whether relevant emergency procedures for the monitoring system have been included in the MR and assess whether these</i>	/PS/ /PoA/ /VAL/ /MR/	<i>Description:</i> This section is not applicable for the current POA and all involved CPA (s) for current monitoring period. <i>Verifier's action:</i> by means of desk study of registered CDM POA DD, CPA-DD& webhosted MR.	N/A	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>procedures have been implemented, when required</i>		<i>Conclusion: N/A</i>		
C.7. Data archive and data protection (PS §56 b) Check whether all records of monitoring parameters are archived according to the monitoring plan. Assess further whether appropriate measures have been taken in order to avoid unintended or intended manipulation or loss of the measured data.	/IM01/ /MR/ /BSPDB/	<i>Description:</i> All the monitoring parameters are archived electronically and or in paper according to registered monitoring plan as verified during site visit. Appropriate measures are in place in order to avoid unintended or intended manipulation of the measured data. The archiving computer is password protected. Authority of login in the database is restricted with authorized personnel only. Moreover regular check-up procedure is there to check the file server in BSP. <i>Verifier's action:</i> This is confirmed through interview of BSP personnel and physical verification archiving system. <i>Conclusion:</i> The archiving system is in place in accordance to the registered POA-DD, CPA-DD and Adequate measures are taken in order to avoid any kind of manipulation of data or information.	OK	OK
D. Data and parameters				
D.1. Data and Parameters fixed ex ante				

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
a) Compliance with registered POA-DD, CPA-DD (F-CDM-FORM, Attachment; D1, VVS § 246 (d)) Check whether the value applied is in compliance with the registered POA-DD, CPA-DD.	/PoA/ /VAL/ /MR/ /CER/	<i>Description:</i> The <i>ex-ante</i> fixed parameters are $NCV_{biomass}$ and $EF_{projected\ fossil\ fuel}$, $f_{NRB,y}$, $N_{s,r}$, $Q_{NRB repl}$. Values mentioned in the webhosted MR as fixed <i>ex ante</i> are correct and in consistence with the registered POA-DD and CPA-DD. <i>Verifier's action:</i> By means of the registered POA-DD, CPA-DD, webhosted MR and submitted CER calculation sheet. However in view of the above observation CAR D1 has been raised. <i>Conclusion:</i> Thus, it is concluded by verification team that the <i>ex-ante</i> fixed parameter values applied are in compliance with the registered POA-DD, CPA-DD.	OK	OK
b) Compliance with the applied methodology (F-CDM-FORM, Attachment; D1) Check whether the value applied is in compliance with the applied methodology or any other tool.	/MR/ /CER/ /AMS/	<i>Description:</i> All the values mentioned in the webhosted MR as fixed <i>ex ante</i> are correct and in consistence with the applied methodology and the sources mentioned thereof. <i>Verifier's action:</i> by means of the applied methodology AMS-I.E "Switch from Non-Renewable Biomass for thermal applications by the user" (Version 04), webhosted MR and submitted CER calculation sheet. <i>Conclusion:</i> No change has been found in the <i>ex-ante</i> values from the applied methodology.	OK	OK
D.2. Data and Parameters monitored				
D.2.1. P (%)		Description: The share of digesters operational (based on the total number implemented using non-renewable biomass).		
a) Measurement / Determination method	/IM01/	<i>Description:</i> As per the POA-DD section E.7 and CPA-DD for	GAR-D1	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
(VVS, §§ 268, 271) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the POA-DD, CPA-DD and the applied methodology.	/PoA/ /VAL/ /AMS/ /SALES/	all CPA's the Percentage of digesters implemented that is operational will be monitored annually on sample basis. The same is reported in Annual Biogas Users' Survey. As verified from the Biogas Users' Survey^{BUS/} for the year 2012-13 and 2013-14 submitted by the PP, it was confirmed that the Percentage of digesters implemented that is operational is calculated. However this is exact value is not correctly calculated using the information mentioned in BUS survey report. Hence, following CAR is raised: For CPA-3 (2013-14) and CPA-4 (2013-14) distribution of Bio-digesters across the ecological zones of Nepal is not correctly taken from BUS Survey Reports for corresponding year. <i>Verifier's action:</i> Desk review of registered POA-DD, CPA-DD and webhosted MR. Final report on annual biogas users' survey conducted for all the CPA's included in the current monitoring period were checked. <i>Conclusion:</i> Pending closure of CAR B1 and D1.		
b) Accuracy and QA/QC Procedure (VVS, §§ 272-278) In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.	/CAL/ /MR/ /ER/ /BUS/ /PoA/ /VAL/	<i>Description:</i> In the emission reduction sheet for CPA-1 CPA-2 and CPA-3 the title of the respective sheet includes the wrong number of Biodigesters. Further, the unit for monitoring parameter "Q_{NRB}" repl. is missing also reference document for monitoring parameter "Ns,r" is missing. <i>Verifier's action:</i> Desk review of registered POA-DD, CPA-DD and webhosted MR. Final report on annual biogas users' survey conducted for all the CPA's included in the current	CAR-D2	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance. Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.</i>		monitoring period were checked. <i>Conclusion:</i> Pending closure of CAR D2.		
c) Correctness (VVS, §§ 268, 271) <i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner. In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given. In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i>	/MR/	☐ Correct ☒ Not correct (initial assessment) <i>Description:</i> Please refer a). <i>Verifier's action:</i> Desk review of registered POA-DD, CPA-DD and webhosted MR. Final report on annual biogas users' survey conducted for all the CPA's included in the current monitoring period were checked. <i>Conclusion:</i> Pending closure of CAR	CAR D1	OK
D.3. Sampling				
a) Implementation of sampling plan (F-CDM-FORM, Attachment; D3) <i>Check whether the CME has applied a sampling approach to determine the monitored values (as per section D.2 above). If this is the case, please provide an assessment whether the PPs have correctly and sufficiently described the implemented sampling plan including</i> a) <i>Description of the implemented sampling design</i> b) <i>Collected data</i> c) <i>Analysis of collected data</i> d) <i>Demonstration on whether the required</i>	/BUS/	☐ No sampling approach has been used by the CME/PP/CPA implementer to determine the monitored parameters OR ☒ A sampling approach has been taken for the following monitored parameter: <i>Parameters:</i> Percentage of digesters implemented that is operational;	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>confidence/precision has been met.</i>		<i>Description:</i> Aforesaid parameters are quantified based on Biogas User Survey. For the purpose of survey; a statistically representative sample size requires drawing of sample from the defined universe using a standard sampling procedure which clearly outlines the statistical reliability of survey findings. As per the Standard for Sampling and Surveys for CDM project activities, the sample has to be determined with 90/10 confidence/precision level. The minimum sample size required for the survey is 62 samples to assure the statistically significant results with desired level of 90 per cent confidence level. Although the sample size was determined to be 62, as per sampling guideline. Thus a total of 62 sample households were included in the survey. <i>Verifier's action:</i> BUS report was checked against sampling survey guidelines. <i>Conclusion:</i> Sampling survey is in compliance with EB69 of Annex 5.		
b) Sampling during verification <i>In case the VT has applied a sampling approach in the course of the verification the approach shall be described for each parameter.</i>	/BUS/	☐ No sampling approach has been used by the VT to verify the monitored parameters OR. ☒ A sampling approach has been applied by the VT for the following monitored parameter: <i>Parameters:</i> Percentage of digesters implemented that is operational; <i>Description:</i> The VVS requires DOEs to apply sampling /survey	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		during their assessments being in accordance with the Sampling and Survey Standards. Appendix C of the standard (EB69/Annex 5) is applied in order to calculate DOE sample size for Verification. Applying sampling standard and guideline the sample size comes out to be 60. Sample size was conservatively calculated by verification team and is kept on a sampling guideline the need of acceptance sampling. However the verification team has conducted site visit on around 52 samples as the most of the sites in the Nepal were not approachable due to rain in the remote areas in Nepal on monsoon season. <i>Conclusion:</i> The VT has applied a sampling approach in the course of the verification. Plants were visited as per the requirement of EB69/Annex 5.		
E. Calculation of Emission reductions				
E.1. Traceability (VVS, §§ 247, 249) <i>Assess if the calculation is fully traceable. In case of complex calculations an Excel calculation spreadsheet shall be used. All applied formulae must be visible.</i>	/CER/	<i>Description:</i> An excel calculation spreadsheet was used. All applied formulae are visible. However, for CPA-3 (2013-14) and CPA-4 (2013-14) distribution of Bio-digesters across the ecological zones of Nepal is not correctly taken from BUS Survey Reports for corresponding year. Revise section D.3 of the webhosted monitoring report accordingly. Emission reduction value is to be corrected accordingly. <i>Verifier's action:</i> The provided excel sheet has been thoroughly assessed by the VT <i>Conclusion:</i> pending closure of CAR D1 and D2.	CAR-D1 CAR-D2	OK
E.2. Parameter consistency	/CER/	<i>Description:</i> All the data are correctly presented in MR as well as in excel sheet. Moreover consistent designations for	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
(VVS, § 249) <i>Assess whether all internal and external parameters and data used for calculation are applied consistently in the monitoring report and the calculation spreadsheet?</i> <i>Consider only the correct data exchange between the monitoring report and the calculation spreadsheet (if any). Further ensure the consistency of notations for all parameters in the POA-DD, CPA-DD, MR and calculation spreadsheet.</i>	/MR/	parameters are mentioned in POA-DD, CPA-DD, MR and excel sheet. Verifier's action: The MR has been crosschecked with the provided excel sheet Conclusion: All the parameters are consistent between MR and excel sheet of emission reduction calculation sheet.		
E.3. Correctness of calculation (VVS, §§ 279-280) <i>Check if the applied formulae and methods for calculating baseline emissions, project emissions and leakage are in accordance with the monitoring plan and / or the approved methodology.</i> <i>Assess whether the provided calculations are complete and reflect all requirements of the monitoring plan.</i> <i>Check especially that no standard or old values have been used for calculation where calculations based on up-to-date data is required.</i> <i>When sampling is undertaken, unless differently specified in the methodology applied, the sample mean value shall be used for the ER calculation instead of the lower or upper bounds of the confidence interval.</i>	/CER/ /MR/ /PoA/ /VAL/	<i>Description:</i> In the emission reduction sheet for CPA-1 CPA-2 and CPA-3 the title of the respective sheet includes the wrong number of Biodgiesters. Further, the unit for monitoring parameter "Q_{NRB}" repl.is missing also reference document for monitoring parameter "Ns,r" is missing. Further, the estimated emission reductions given in the spread sheet is found to be the rounded down value, and hence is acceptable. However no formulation to specifically round down the emission reduction is observed in the spreadsheet. <i>Verifier's action:</i> Desk review of submitted excel sheet, registered POA-DD, CPA-DD and BUS reports. <i>Conclusion:</i> Applied formulae and methods for calculating baseline emissions, project emissions and leakage are in accordance with the monitoring plan and the approved methodology. However pending closure of D2.	CAR-D2	OK
E.4. Emission reductions table (F-CDM-FORM, Attachment, E.4)	/CER/	☒ The MR includes in section E.4 a summary table of the emission reductions calculation.	CAR-D1	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Check if the MR includes a summary table of the emission reductions calculation specifying separately - Total baseline emissions - Total project emissions: - Total leakage - Total emission reductions. Assess whether the values are correct or need to be revised as a consequence of issues identified above.	/MR/	☒ The summary table specified the total baseline, project and leakage emissions as well as the total emission reductions separately. ☐ The values as specified in the ER summary table are correct; no issues have been identified during the verification which requires changes in the ER calculation. ☐ During the verification issues with impact on the ER calculation have been identified. Thus subject to the closure of above listed findings the summary table in E.4 needs to be revised. In this context the following additional findings have been identified: Subjected to the closure of the finding CAR D1 as it affects the emission reduction calculations.		
E.5. Comparison with ex-ante determined emission reductions (F-CDM-FORM, Attachment, E.5; E.6) Check if the MR includes a comparison of actual values of the monitoring period with the estimations in the registered POA-DD, CPA-DD. Check further whether in case of an increase an appropriate explanation is included in the MR. Assess in case of a significant increase whether this is due to technical or organisational changes within or outside the control of the CME/PP/CPA implementer and – if this is case – whether the PRC have been considered appropriately.	/CER/ /MR/ /PoA/ /VAL/	<i>Description:</i> the comparison of the actual emission reductions with the emission reductions mentioned in the registered POA-DD, CPA-DD has been mentioned in the section E.5 of the webhosted MR and the justifiable reason is mentioned for the lowering of the ER values in section E.6. <i>Verifier's action:</i> Desk review of registered POA-DD, CPA-DD and webhosted MR. The above observation is raised as CAR E4. <i>Conclusion:</i> the reason mentioned for the marginal increase of the ER values is found justifiable and accepted by verification team. However the actual ERs presented is yet to corrected w.r.t finding CAR D1.	~~CAR D1~~	OK
E.6. ER during the 1st commitment period and the period from 1 January 2013	/CER/ /MR/	☒ The MR in section E.7 includes a summary table of the ER breakdown	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
onwards (F-CDM-FORM, Attachment, E.7) Check if the MR includes in chapter E.7 a breakdown of the actual ER into a) ER up to 2012-12-31 and b) ER from 2013-01-01 onwards The ERs for each period should be determined as per the actual generation. In cases where this is not possible or a cap has been applied a proportional (time related) approach should be chosen.		a) ER up to 2012-12-31 and b) ER from 2013-01-01 onwards ☒ The breakdown of the ERs during the first commitment period and from 2013-01-01 onwards is as follows: ☐ The ER have completely been generated during the first commitment period ☒ The ERs have completely been generated from 2013-01-01 onwards, ☐ The ERs have partly been generated during the first commitment period and partly from 2013-01-01 onwards. ☒ The breakdown of the ERs is correct, considering the applicable guidance.		

ANNEX 2: CALIBRATION DATES AND VALIDITY OF INSTALLED MONITORING EQUIPMENT

Not applicable. As there is no monitoring equipment applied in the programme. Therefore, no calibration of equipment is needed.

ANNEX 3: STATEMENTS OF COMPETENCE OF INVOLVED PERSONNEL

TUV NORD Certification		
Statement of Competence Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program		
Mr. Pankaj Patel		
SCHEME	STATUS	VALID UNTIL
CDM (Validation, Verification)	Lead Assessor	2016-06-21
VCS	Lead Assessor	2016-06-21
Authorization status for technical areas within sectoral scopes:		
CODE	TECHNICAL AREA	TR SUBCATEGORIES
2.2	Heat Distribution	
3.1	Energy Demand	
31 - Rev. 1 Date: 2014-01-09		
Statement_of_Competence_2014_01_08_rev1.doc 301-VA000-F20 rev3 / 2013-10-25		

TUV NORD Certification		
Statement of Competence Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program		
Mr. Indrapal Parmar		
SCHEME	STATUS	VALID UNTIL
CDM	Assessor (Validation, Verification)	2014-03-27
VCS / ISO 14064-2	Assessor	2014-03-27
Authorization status for technical areas within sectoral scopes:		
CODE	TECHNICAL AREA	TR SUBCATEGORIES
1.2	Renewable Energies	
191 - Rev. 2, Date: 2013-02-06		
191_301-VA000-F20_2013-05-02_rev2.doc 301-VA000-F20 rev3 / 2013-10-25		

TUV NORD Certification		
Statement of Competence Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program		
Mr. Ezhilarasu G.		
SCHEME	STATUS	VALID UNTIL
CDM	Assessor (Validation, Verification)	2013-04-13
VCS	Assessor	2013-04-13
Authorization status for technical areas within sectoral scopes:		
CODE	TECHNICAL AREA	
1.2	Renewable Energies	
3.1	Energy Demand	
13.1	Waste Handling and Disposal	
130 - Rev. 6, Date: 2011-03-17		
130_301-VA000-F20 rev3 / 2013-10-25 301-VA000-F20 rev3 / 2013-10-25		



Statement of Competence
Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Mohinder Amarnath B. J.

SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor	2013-06-21
Validation, Verification	Lead Assessor	2013-06-21
VCS	Lead Assessor	2013-06-21

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewable Energies
3.1	Energy Demand
4.1	Cement Sector
13.1	Waste Handling and Disposal

053 – Rev. 1, Date: 2011-06-20

053_S01-F503_2011-06-20_rev1

S01-F503 rev3 / 2010-04-19



Statement of Competence
Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Kunal Rami

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2016-02-27
VCS / ISO 14064-2	Senior Assessor Technical Reviewer	2016-02-27

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA	TR SUBCATEGORIES
1.2	Renewable Energies	1.2.1 Hydro 1.2.2 Wind 1.2.3 Geothermal 1.2.4 Solar 1.2.5 Tidal
6.1	Construction	
13.1	Waste Handling and Disposal	13.1.1 Waste Management 13.1.2 Waste Water Management

224 – Rev. 4, Date: 2013-02-28

224_S01-VA060-F20_2013-02-28_rev4.doc

S01-VA060-F20 rev3 / 2012-10-25