GS VERIFICATION AND CERTIFICATION REPORT

HIVOS

INDONESIA DOMESTIC BIOGAS PROGRAMME OF ACTIVITIES (IDBP) (ID 1172)

VPA-1 ID 1174 5TH MONITORING PERIOD

VPA-2 GS 5303 1ST MONITORING PERIOD

Report No: MY-GSPVer 18/04 – 18/005

Date: 2018-10-19

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Verification Report:	***Report No.***	***Rev. No.***	***Date of 1st issue:***	***Date of this rev.***
	MY-GSPVer 18/04 – 18/005	1.2	2018-05-20	2018-10-19
Programme of Activities:	***Title:***		***GS Registration date:***	***GS No.:***
	Indonesia Domestic Biogas Programme of Activities (IDBP) (ID 1172)		2013-05-31	1174
			2017-05-04	5303
	VPA-1 (ID 1174) GS 1174		***Verification No.:***	
	VPA-2 GS 5303		VPA-1 5th periodic verification VPA-2 1st periodic verification	
			PoA Scale	
			☐ *Large Scale*	☒ *Small Scale*
	Duration of the PoA:		***From:***	***To:***
	28 years		2011-06-01	2039-05-31
	VPA #1 title:		***Inclusion date***	***GS No.:***
	VPA-1 Indonesia Domestic Biogas Programme of Activities (IDBP) (ID 1174)		2013-05-31	1174
	VPA-2 Indonesia Domestic Biogas Programme of Activities (IDBP) (ID 5303)		2017-05-04	5303
	Crediting period:		***From:***	***To:***
	VPA-1 ☒ *Renewable (7y)* ☐ *Fixed (10y)*		2011-06-01	2018-05-31
	VPA-2 ☒ *Renewable (7y)* ☐ *Fixed (10y)*		2017-01-02	2024-01-01
Project Participant(s):	***Client:***		**Coordinating/Managing Entity**	
	HIVOS		HIVOS Indonesia	
	Non Annex 1 country:		***Annex 1 country:***	
	Indonesia		Netherlands	
	PP from non-Annex 1 country:		***PP from Annex 1 country:***	
	HIVOS Indonesia		HIVOS	

VPA No.	***Monitoring period (MP):***			***Applied methodology/ies***		
	From:	***To:***	***No. of days:***	***Title:***	***Version No.:***	***Scope(s) / TA(s)***
1	2017-01-01	2017-12-31	365	Technologies and practices to displace decentralized thermal energy consumption	1.0	1, 3 & 13
2	2017-01-02	2017-12-31	364	Technologies and practices to displace decentralized thermal energy consumption	1.0	1, 3 & 13

Monitoring Report #1:			***Monitoring Report #2:***		
Draft version:	***Final version:***	**VPA Batch**	***Draft version:***	***Final version:***	**VPA Batch**
2018-04-07 v 0.1	2018-08-27, v0.3	1	2018-04-07 v 0.1	2018-10-18, v0.4	2

Verification team / Technical Review and Final Approval:	***Verification Team:***	***Technical review:***	***Final approval:***
	Cheong, Chun Yuen (Robert) – TL/TE Ang, Wai Sheng (Terence (TA)	Lubanga, David Winter, Stefan	Winter, Stefan

Key dates of verification:	***Publication of Work Plan :***	***PFR issued:***	***On-site (from):***	***On-site (to):***
	2018-04-12	2018-05-04	2018-04-30	2018-05-04
Summary of Verification opinion	HIVOS has commissioned the TÜV NORD JI/CDM Certification Program to carry out the VPA-2 periodic verification of the PoA: "Indonesia Domestic Biogas Programme of Activities (IDBP) (ID 1172)", with regard to the relevant requirements for GS project activities.			

<table>
<tr><td></td><td colspan="3">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 GS methodology,
☒ 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, and
☒ the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner.
☒ the project has contributed to sustainable development.
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).</td></tr>
<tr><td rowspan="3">Emission reductions: [tCO₂e]</td><td>Total verified amount</td><td>As per draft MR #1:</td><td>As per VPA-DD:</td></tr>
<tr><td rowspan="2">VPA-1: 42,590
VPA-2: 2,332</td><td>42,277</td><td>20,874 /a</td></tr>
<tr><td>As per draft MR #2</td><td></td></tr>
<tr><td></td><td>3,596</td><td>3,406 /a</td></tr>
<tr><td rowspan="2">Document information:</td><td colspan="2">Filename:</td><td>No. of pages:</td></tr>
<tr><td colspan="2">18-005 IDBP VPA1 MR5 VPA2 MR1 FVerR 2018-10-19</td><td>162</td></tr>
</table>

Abbreviations:

CA	**Corrective Action / Clarification Action**
CAR	**Corrective Action Request**
CDM	**Clean Development Mechanism**
CER	**Certified Emission Reduction**
CO_2	**Carbon dioxide**
CO_{2eq}	**Carbon dioxide equivalent**
CL	**Clarification Request**
VPA-DD	**Component Project Activity Design Document**
DVerR	**Draft Verification Report**
ER	**Emission Reduction**
FAR	**Forward Action Request**
GHG	**Greenhouse gas(es)**
MP	**Monitoring Plan**
MR	**Monitoring Report**
PA	**Project Activity**
PoA-DD	**Programme of Activities Design Document**
PP	**Project Participant**
QA/QC	**Quality Assurance / Quality Control**
UNFCCC	**United Nations Framework Convention on Climate Change**
VVS	**Validation and Verification Standard**

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1. INTRODUCTION

HIVOS has commissioned the TÜV NORD JI/CDM Certification Program (CP) to carry out the 5th periodic verification of the Programme of Activities:

"Indonesia Domestic Biogas Programme of Activities (IDBP) (ID 1172)"

with regard to the relevant requirements for CDM project activities. The verifiers have reviewed the implementation of the monitoring plan(s) (MP) as described in the registered PoA-DD and VPA-DDs and GS PoA Passports.

GHG data for this monitoring period was verified in detailed manner applying the set of requirements, audit practices and principles as required under the CDM Validation and Verification Standard/VVS/ of the UNFCCC and GS approved methodology.

Sustainable Development Indicators for this monitoring period were verified in detailed manner as required under the GS Toolkit/GST, GS requirements/GSR/, relevant GS Annexes, and the GS Validation and Verification Manual/GS-VVM/.

This report summarizes the findings and conclusions of this PoA 5th periodic verification of the GS registered VPA-1 and VPA-2 respectively.

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 activity as given in the VPA-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,
- 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/GSPoA-DD/, the validated Component Project Activity Design Document (VPA-DD), the GS PoA Passport, the monitoring report(s)/MR/, emission reduction calculation spread sheet /XLS/, 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 Programme of Activities:

- 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/,
- GS Toolkit and Requirements versions 2.1 /GST/GSR/
- monitoring plan as given in the registered PoA-DD and VPA-DD(s) /GSPoA-DD/VPA1/VPA2/,
- Approved GS Methodology/GSM/

2. GHG PROJECT DESCRIPTION

2.1. Technical Project Description of the Programme of Activities

The technology implemented under the PoA is biodigesters to treat animal waste anaerobically to generate biogas for use as cooking fuel. The capacity of the biodigesters ranges from 4 m^3 to 12 m^3.

There are two types of biogas systems that will be initially introduced by this PoA.

- Fixed-dome biodigester: This model is constructed with bricks and stone masonry installed underground.
- Plastic bag biodigester: This model constitutes a plastic bio-digester composed of a large bag that is typically stored above-ground.

2.2. Technical Description of the Component Project Activities

The Programme of Activities consists in a total of 2 VPAs briefly described as following:

VPA-1:

The technology implemented under the VPA-1 are biodigesters of fixed dome type installed underground to treat animal waste anaerobically to generate biogas for use as cooking fuel.

The key parameters of the VPA-1 are given in Table 2-1.1:

Table 2-1.1: Technical data of the component project activity

Plant size	**4 m^3**	**6 m^3**	**8 m^3**	**10 m^3**	**12 m^3**
Manure requirements (kg/day)	32	48	64	80	96
Estimated biogas production (m^3/day)	0.8	1.6	2.4	3.2	4.2
Estimated firewood savings (kg/day)	2.8	5.6	8.4	11.2	14.7

VPA-2:

The technology implemented under the VPA-2 are biodigesters of fixed dome type installed underground to treat animal waste anaerobically to generate biogas for use as cooking fuel.

The key parameters of the VPA-2 are given in Table 2-1.2:

Table 2-2.2: Technical data of the component project activity

Plant size	**4 m^3**	**6 m^3**	**8 m^3**	**10 m^3**	**12 m^3**
Manure requirements (kg/day)	32	48	64	80	96
Estimated biogas production (m^3/day)	0.8	1.6	2.4	3.2	4.2

Estimated firewood savings (kg/day)	2.8	5.6	8.4	11.2	14.7

2.3. Project Location

The details of the VPA-1 and VPA-2 locations are given in Table 2-3:

Table 2-3: VPA(s) Location

VPA No.: 1	Project Location			
Host Country	Indonesia			
Region:	9 active provinces during the current monitoring period			
Project location address:	9 provinces during monitoring period			
Latitude / longitude of program provinces:	#	Province	Latitude	Longitude
	1	Lampung	5° 27' 0.0000" S	105° 16' 0.0120" E
	2	West Java	6° 54' 53.0784" S	107° 36' 35.3160" E
	3	Central Java	7° 47' 49.4448" S	110° 22' 13.9044" E
	4	East Java	7° 15' 1.6020" S	112° 46' 7.8420" E
	5	Bali	8° 24' 34.2648" S	115° 11' 20.1084" E
	6	Nusa Tenggara Barat	8° 39' 10.5602" S	117° 21' 41.9314" E
	7	Nusa Tenggara Timur	8° 39' 26.575" S	121° 4' 45.732" E
	8	Yogyakarta	7 ° 47 '49.4448' 'S	110 ° 22 '13.9044' E
	9	South Sulawesi	5° 8' 51.5940" S	119° 25' 57.8352" E

VPA No.: 2	Project Location			
Host Country	Indonesia			
Region:	9 active provinces during the current monitoring period			
Project location address:	9 provinces during monitoring period			
Latitude / longitude of program provinces:	#	Province	Latitude	Longitude
	1	Lampung	5° 27' 0.0000" S	105° 16' 0.0120" E
	2	West Java	6° 54' 53.0784" S	107° 36' 35.3160" E
	3	Central Java	7° 47' 49.4448" S	110° 22' 13.9044" E
	4	East Java	7° 15' 1.6020" S	112° 46' 7.8420" E
	5	Bali	8° 24' 34.2648" S	115° 11' 20.1084" E
	6	Nusa Tenggara Barat	8° 39' 10.5602" S	117° 21' 41.9314" E
	7	Nusa Tenggara Timur	8° 39' 26.575" S	121° 4' 45.732" E
	8	Yogyakarta	7 ° 47 '49.4448' 'S	110 ° 22 '13.9044' E
	9	South Sulawesi	5° 8' 51.5940" S	119° 25' 57.8352" E

2.4. Project Verification History

Essential events since the registration of the PoA-DD are presented in the following Table 2-4.

Table 2-4: Status of previous Monitoring Periods

VPA-1

#	Item	Time	Status
1	PoA-DD registration	2013-05-31	Registered
2.	Inclusion of VPA-1	2013-05-31	Registered
3	1st Monitoring period	2011-06-01 to 2013-05-31	Issued
4	2nd Monitoring period	2013-06-01 to 2014-12-31	Issued
5	3rd Monitoring period	2015-01-01 to 2015-12-31	Issued
6.	4th Monitoring Period	2016-01-01 to 2016-12-31	Issued
7	5th Monitoring Period	2017-01-01 to 2017-12-31	Request Issuance

VPA-2

#	Item	Time	Status
1.	Inclusion of VPA-2	2017-05-04	Date Registered
2	1st Monitoring Period	2017-01-02 to 2017-12-31	Request Issuance

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

Table 2-4: Overview Post Registration Changes

#	Changes on PoA-DD/VPA-DD	Applicable from – to / as of	MP	Type of post registration change [1)]	Description	Status[2)] / Date
	n.a.					

[1)] IVPAiPoA : Inclusion of component project activities in programme of activities
TDfrMP : Temporary deviation from registered monitoring plan
TDfMM : Temporary deviation from the monitoring methodology
CrVPADD : Corrections to the registered VPA-DD
PCfrMP : Permanent changes from registered Monitoring Plan
PCfMM : Permanent changes from Monitoring Methodology
CoPD : Changes to the project design of a registered PoA, or generic or specific VPA

[2)] Approval (by Gold Standard) 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
- A desk review of the carbon and SD Monitoring Reports/MR/ submitted by the client and additional supporting documents with the use of customised verification protocol /CPM/ according to the Validation and Verification Standards /VVS//GS-VVM/,
- 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 GS 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 one trainee 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.	Cheong, Chun Yuen (Robert)	TN Malaysia	TL	SA	☒	1.2, 3.1, 13.2	☒	☒	☒
☒ Mr. ☐ Ms.	Ang, Wai Sheng (Terence)	TN Malaysia	OT	T	☐	-	☐	☐	☒
☒ Mr. ☐ Ms.	Lubanga, David	-	TR[B]	LA	☒	1.2, 3.1	☒	☐	-
☒ Mr. ☐ Ms.	Winter, Stefan	TN CERT GmbH	TR/FA[B]	SA	☒	1.2, 3.1, 13.2	☒	☐	-

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 component project activities 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 project activity, 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. 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*)**
The following potential risks were identified and divided and structured according to the possible areas of occurance.	*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 implemented:*	*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.*	*The additional verification testing performed is described. Testing may include:* - *Sample cross checking of manual transfers of data* - *Recalculation* - *Spreadsheet 'walk throughs' to check links and equations* - *Inspection of calibration and maintenance records for key equipment* - *Check sampling analysis results* *Discussions with process engineers who have detailed knowledge of process uncertainty/error bands.*	*Having investigated the residual risks, the conclusions should be noted here. Errors and uncertainties are highlighted.*

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 GS 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 require-ments 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 verifi-cation 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.

3.5. Desk review

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

- the last revision of the PoA-DD and VPA-DD including the monitoring plan/GSPoADD/VPA1DD/VPA2DD/,
- the last revision of the validation report/VAL/,
- documentation of previous verifications/VER/
- the monitoring report(s), including the claimed emission reductions for the project/MRVPA1/MRVPA2/,
- the emission reduction calculation spreadsheet/ERVAP1/ERVPA2/.

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

3.6. 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 component project activity as per the registered VPA-DD or any approved revision thereof;
- 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.
- Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the VPA-DD;
- A cross check between information provided in the monitoring report and data from other sources such as plant logbooks, inventories, purchase records or similar data sources;
- A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PoA-DD, VPA-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;
- A detailed review of the implementation and monitoring of all SD indicators as per the registered GS PoA Passport
- An identification of quality control and quality assurance procedures 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 HIVOS Indonesia, consultants and Yayasan Rumah Energi operational staff 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
1. Projects & Operations Personnel Hivos Indonesia Yayasan Rumah Energi - CPA Implementer Climate Focus – Carbon Consultant JRI – Survey Consultant	- General aspects of the project - Technical equipment and operation - Changes since validation / previous verification - Monitoring and measurement equipment - Remaining issues from validation / previous verification - Calibrations - Quality management system - Involved personnel and responsibilities - Training and practice of the operational personnel - Implementation of the monitoring plan - Monitoring data management - Usage Survey data - Kitchen Performance Test data - Data uncertainty and residual risks - GHG emission reduction calculation - Implementation of SD indicators - Contribution to Sustainable Development - Procedural aspects of the verification - Maintenance - Environmental aspects - SD Indicators monitoring - GS Registration and previous Issuance Review Comment

The list of interviewees is included in chapter 7.4.

3.7. 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.

3.8. 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 be 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.

3.9. 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.

3.10. 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.

3.11. 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(s)/MRVPA1/MRVAP2/, the calculation spreadsheet/ERVAP1/ERVPA2/, PoA-DD/GSPoADD/, VPA-DD/VPA1DD/VPA2DD/, 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

VPA-1

Verification topic	No. of CAR	No. of CL	No. of FAR
A – Description of project activity	0	0	0
B – Implementation of project activity	1	0	0
C – Description of Monitoring System	3	1	0
D – Carbon Data and Parameters	3	0	0
E - Calculation of Emission Reductions	5	0	0
F – Sustainability Monitoring Parameters	6	0	0
SUM	**19**	**1**	**0**

VPA-2

Verification topic	No. of CAR	No. of CL	No. of FAR
A – Description of project activity	0	0	0
B – Implementation of project activity	3	0	0
C – Description of Monitoring System	3	1	0
D – Carbon Data and Parameters	3	2	0
E - Calculation of Emission Reductions	6	0	0
F – Sustainability Monitoring Parameters	5	0	0
SUM	**19**	**3**	**0**

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).

VPA-1:

Finding	**B1**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, table 3: 1. During review of VPA-2 database file, it was found there are digesters built in November & December 2016 that are not included in this VPA-1. 2. The database shall be corrected accordingly. 3. All other tables with shall be updated accordingly to reflect the no. of digesters.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. The VPA-1 database file has been updated to include the November and December 2016 units. This relates to a total of 283 units which now appear in rows 20225 – 20431. All of these units were marked as '2017' in the original database file (column H) but actually were constructed in 2016 (column F). As a result, 12 units have been added to November 2016 and 271 units have been added to December 2016. The ER calculation sheet has been updated to account for this – see cells CR7 and CS7 of the "Cumulative VER" sheet. Furthermore, as a result this number has been deducted from the VPA-2 database file, accordingly. 2. See updated file "IDBP Database VPA-1 20Mar2018.xls" 3. See "20180430 IDBP VPA-1 MP5_v02" for the updated MR and "20180430 ER Calculation VPA 1 MP5_v02.xls" for the updated ER sheet.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, table 3: 1. Those are digesters built in November & December 2016 have been added back into the database of VPA-1. The 2. The database is corrected to include those units installed during November and December 2016 accordingly. 3. All other tables have updated accordingly to reflect the no. of digesters built in VPA-1		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	**C1**		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 2.3, table 7: Clarifications requested for the cluster, total no. of sub-cluster and total sample size for BUS 2018 are derived.		

Finding	C1
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	A clarification has been requested from JRI on this matter, and a response has been shared with the DOE on 03 May 2018 which confirms how the clusters are defined and how many sub-clusters there are. This information has been updated in table 7 accordingly in the "20180430 IDBP VPA-1 MP5_v02.docx" document.
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 2.3, table 7: The PP has updated revised MR as regards to the cluster, total no. of sub-cluster and total sample size for BUS 2018.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	C2		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, section 2.4 item 5 BUS Survey and Usage Survey design: 1. The BUS 2017 shall be BUS 2018. 2. Refer "The BUS approached a sample of 267 households", the sample size is inconsistent with table 3.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. The change has been made to BUS 2018 as per "20180430 IDBP VPA-1 MP5_v02.docx" 2. Table 7 has been updated to mention that the 267 refers to the BUS (CMS) while an additional 5 households were included in the US conducted by phone.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, section 2.4 item 5 BUS Survey and Usage Survey design: 1. The BUS is corrected to BUS 2018. 2. Correction made in table to reflect 267 refers for the BUS (CMS) while an additional 5 households were for US conducted via phone.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	C3		
Classification	☒ CAR	☐ CL	☐ FAR

Finding	C3
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 2.4, table 9: 1. Year 8 is not applicable for VPA-1. 2. Year 7 results shall include the data from year 8. 3. The referred MPIII is incorrect. 4. The correspondence data in BUS 2018 tabulation spreadsheet to be updated accordingly.
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. Table 9 has been adapted to exclude Year 8. This last age group has been greyed out as its result include partially VPA-1 units and partially VPA-2 units. As such Year 8 results can be dismissed as they are redundant from the perspective of the Usage Survey. Also, they report the exact same drop-off rate as Year 7. 2. The numbers cannot be added to Year 7 as then the total amount of households surveyed for age group 7 becomes 60+, which is not necessary. As per the response above, the Year 8 data has been greyed out as it does not fully apply to VPA-1. 3. The reference to MP have been updated to MPIV. 4. As per response #2, the PP sees no need to update the BUS 2018 tabulation sheet. Please note that Cell H231 in sheet "BUS" already exclude year 8 data. Also, year 8 drop off rate in Cell C217 is the same as for year 7 in Cell D217, hence the results do not change. Cells C213 and B228 have been updated to clarify Age 8 is not relevant for VPA-1. Also the reference in the MR has been updated to exclude Cell C217, see footnote 27 on p.25 of "20180430 IDBP VPA-1 MP5_v02.docx"
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.1, Section 2.4, table 9: 1. Year 8 is excluded in revised table since not applicable for VPA-1. 2. The PP explained numbers cannot be added to Year 7 since the total number of households surveyed under age group 7 has becomes 60+, which is not necessary. Year 8 data has been greyed out since not applicable to VPA-1. 3. The referred MP is corrected as MPIV 4. As explained by PP above, the correspondence data in BUS 2018 tabulation spreadsheet is not required to update since year 8 data is excluded. The MR is updated accordingly to reflect the updated reference in footnote 27.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	C4		
Classification	☒ CAR	☐ CL	☐ FAR

Finding	C4
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1: 1. Table 15: Age 8 is not applicable for this VPA-1. 2. Table 15: Age 7 shall be extended until 31/12/2016. 3. Footnote 27 referred spreadsheet to be corrected accordingly. 4. Table 16: Age group 8 is not applicable for this VPA-1. 5. Table 16: Age group 7 shall be extended till 31/12/2016. 6. This VPA-1 stopped on 31/12/2016. The sentence "This means that in total 2,815 units have dropped off up until 31/12/2017" to be corrected accordingly. 7. Footnote 31 to be corrected in reference to bot item 4. 8. The correspondence data in BUS 2018 tabulation spreadsheet to be updated accordingly.
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. Table 15 has been adjusted to exclude Age 8 by greying this column out. The header of the table has also been added for clarification 2. This change has been implemented as per request 3. Footnote 27 has been adjusted to exclude Age 8 data 4. Table 16 has been adjusted to exclude Age 8 by greying this column out. The header of the table has also been added for clarification 5. This change has been implemented as per request 6. The sentence has been updated to read "This means that in total 2,815 units have dropped off up until 31/12/2016" 7. The reference to the cell remains the same. However, Cell G231 has been adapted to exclude Age 8 data. 8. The BUS 2018 tabulation sheet has been updated as per response #7. Also, Cell F227 has been updated to include the November and December 2016 additions as per finding B1. See "20180407 BUS 2018 Tabulation JRI.xls". Table 16 in the MR has also been updated to reflect these changes.

Finding	C4
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1: 1. Table 15 is corrected to exclude Age 8 which is not applicable for VPA-1. 2. Table 15: Age 7 is extended until 31/12/2016. 3. Footnote 27 referred spreadsheet is corrected accordingly. 4. Table 16: Age group 8 is deleted since not applicable for VPA-1. 5. Table 16: Age group 7 is extended until 31/12/2016. 6. This VPA-1 stopped on 31/12/2016. The sentence is corrected "This means that in total 2,815 units have dropped off up until 31/12/2016". 7. Footnote 31 the reference cell is corrected as G231. 8. The correspondence data in BUS 2018 tabulation spreadsheet is updated accordingly with the corrections above.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	D1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1 Section 3.1.1, Parameter $U_{p1,y}$: 1. The referred source cell data spreadsheet to be corrected accordingly 2. The data shall be corrected with correction from CAR B1		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. The reference has been updated in the new MR version. 2. The impact of the November and December 2016 biodigester additions has been incorporated in the data presented in Table 17 of the MR.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2 Section 3.1.1, Parameter $U_{p1,y}$: 1. The referred source cell data spreadsheet is corrected accordingly 2. The data is corrected with correction of CAR B1		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	D2		
Classification	☒ CAR	☐ CL	☐ FAR

Finding	D2
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1 Section 3.1.1, Parameter $N_{,T,h}$: 1. Footnote 38 on pigs data are captured during survey was not justified why the input was not considered. 2. The data shall be corrected with correction from CAR B1
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. Footnote 38 has been updated to include the mention of pigs. 2. The impact of the November and December 2016 biodigester additions has been incorporated in the data presented in Table 17 of the MR.
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2 Section 3.1.1, Parameter $N_{,T,h}$: 1. Footnote 38 is updated to include pigs. 2. The data shall be corrected with correction from CAR B1
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	D3		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1 Section 3.1.1, Parameter $No_{,p1,y}$: The data shall be corrected with correction from CAR B1		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The impact of the November and December 2016 biodigester additions has been incorporated in the data presented in Table 17 of the MR.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2 Section 3.1.1, Parameter $No_{,p1,y}$: The data is corrected with correction of CAR B1		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	E1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1.5, table 32: The Head / average biodigester for dairy cows shall be adjusted with clarification of CAR.D2		

Finding	E1
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	This issue was clarified with JRI. As per the response shared with the DOE on 03 May 2018, the head count for the dairy cows is correct (Cell MC212). Column MD refers to how many dairy cows were reported by households *before* a biodigester was installed.
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1.5, table 32: The Head / average biodigester for dairy cows has been adjusted with correction of CAR.D2
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	E2		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1.5, table 35. The data for number 4.94 is inconsistent with the ER spreadsheet.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The number in Table 35 has been corrected to 4.59. The rest of the numbers are not affected and therefore remain the same, this was just a typo.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1.5, table 35. The data is corrected to 4.59 and consistent with the ER spreadsheet.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	E3		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.16, table 38: 1. For conservative, the PE for bioslurry shall be included. 2. The ER spreadsheet shall be corrected to include item 1 above accordingly. 3. The data in respective tables of MR shall be corrected.		

Finding	**E3**
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. For conservativeness, PE from bio-slurry has been now accounted for. See updated text at the end of Section 3.1.5 of the MR v.02 as well as Cell H45 of the ER calculation sheet "Bio-slurry 2018" and Cell E80 of sheet "GS VER 2018". 2. See answer above, this has been updated. 3. The MR has been updated for this information. See "20180430 IDBP VPA-1 MP5_v02.docx"
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.16, table 38: 1. The PE for bioslurry is included in ER calculation, thus reduce the ER emissions. 2. The ER spreadsheet is corrected to include item 1 above. 3. The data in respective tables of MR are corrected accordingly.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	**E4**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1.7: The reference section for the sentence below table 41 is not traceable.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	There is no section 3.26. The reference to this section has been deleted from the MR.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1.7: There is no section 3.26, therefore, reference section is deleted is appropriate.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	**E5**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	ER Calculation VPA-1 MP5 v 0.1 spreadsheet, GS VER 2018 sheet: 1. The number of units shall be corrected with the correction of CAR B1. 2. The data source for 4.58% and 1030 in cell E77 are not traceable.		

Finding	**E5**
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. The number of units has been updated to the new amount. Specifically see the additions in Cells CR7 and CS7 which show the additional 12+271=283 units added to November and December 2016. 2. Cell E77 has been updated to include the calculation (6/131) rather than absolute figure of 4.58%. This relates to the 6 hhs out of 131 surveyed in the Leakage Assessment that reported the use of more biomass. A further clarification has been added to Cell G77.
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	ER Calculation VPA-1 MP5 v 0.2 spreadsheet, GS VER 2018 sheet: 1. The number of units are corrected with the correction of CAR B1. 2. The data in cell E77 is updated. The PP has included a clarification to demonstrate the source of the date applied in calculating data in cell E77.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	**F1**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Table 17 & Section 4.2.1, GS Indicator GS-03: 1. The number of units to be corrected with correction of CAR B1 2. The reference cell stated in footnote 72 is not traceable.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. The number has been updated accordingly to reflect higher number of units. 2. For calculation, refer to “20180507 ER Calculation VPA 1 MP5v02” sheet “GS VER 2018” Cell E90		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Table 17 & Section 4.2.1, GS Indicator GS-03: 1. The number of units are corrected with correction of CAR B1 2. The reference has been updated and refer to cell E90.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	**F2**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Table 17, Section 4.2.1, GS Indicator GS-07: The reference cells of 20180407 BUS 2018 Tabulation JRI” sheet “BUS” are incorrect.		

Finding	F2
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The footnoted reference has been updated to reflect the correct linkage.
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Table 17, Section 4.2.1, GS Indicator GS-07: The reference cells of 20180407 BUS 2018 Tabulation JRI" sheet "BUS" are corrected and consistent with BUS.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	F3		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Table 17 & Section 4.2.1, GS Indicator GS-07: The number of units to be corrected with correction of CAR B1		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The numbers recorded for this indicator have been updated to reflect the CAR B1. See "20180407 BUS 2018 Tabulation JRI.xls" Cells PM215-216		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Table 17 & Section 4.2.1, GS Indicator GS-07: The number of units are corrected with correction of CAR B1.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	F4		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Table 17 & Section 4.2.1, GS Indicator GS-08: The number of units to be corrected with correction of CAR B1		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The numbers recorded for this indicator have been updated to reflect the CAR B1.		

Finding	F4
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Table 17 & Section 4.2.1, GS Indicator GS-08: The number of units are corrected with correction of CAR B1.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	F5		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Table 17 & Section 4.2.1, GS Indicator GS.10: The number of units to be corrected with correction of CAR B1		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The changing of the total number of units as per CAR B1 does not change this indicator.		
Assessment #1 The assessment shall encompass all open issues in annex A-1. In case of *non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Table 17 & Section 4.2.1, GS Indicator GS.10: There is no change since the changed for the number of units in CAR B1 has not impact.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	F6		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Table 17 & Section 4.2.1, GS Indicator GS-12: The number of units to be corrected with correction of CAR B1		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	GS-12 is not impacted by the CAR B1 as it relates to trainings.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Table 17 & Section 4.2.1, GS Indicator GS-12: The correction of CAR B1 has no impact to the indicator, therefore there is no need to update the date.		

Finding	F6
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

VPA-2:

Finding	B1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, All Sections: The start date of monitoring period for the VPA shall be as at 02/01/2017 according to GS final review report.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The start date has been moved to 02/01. Please see the new MR "20180430 IDBP VPA-2 MP1_v02.docx"		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, All Sections: The start date of monitoring period for the VPA is corrected as 02/01/2017 according to GS final review report.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	B2		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, table 1: The start date of the crediting period to be corrected according to GS final review report as from 02/01/2017 to 01/01/2024 (both dates included.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Table 1 of the new MR has been updated accordingly.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, table 1: The start date of the crediting period is corrected according to GS final review report as from 02/01/2017 to 01/01/2024 (both dates included.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	**B3**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, table 3: During review of database file, it was found there are digesters built in November & December 2016 shall be removed and report in VPA-1		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The VPA-2 database file has been updated to exclude the November and December 2016 units. This relates to a total of 283 units. All of these units were marked as '2017' in the original database file (column H) but actually were constructed in 2016 (column F). The ER calculation sheet has been updated to account for this – see Cell C7 of the "Cumulative VER" sheet. Furthermore, as a result this number has been deducted from the VPA-2 database file, accordingly. See updated file "IDBP Database VPA-2 20Mar2018.xls"		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, table 3: The databased is updated and removed digesters built in December 2016 and reported in VPA-1.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	**C1**		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 2.3, table 7: Clarifications requested for the cluster, total no. of sub-cluster and total sample size for BUS 2018 are derived.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	A clarification has been requested from JRI on this matter, and a response has been shared with the DOE on 03 May 2018 which confirms how the clusters are defined and how many sub-clusters there are. This information has been updated in table 7 accordingly in the "20180430 IDBP VPA-2 MP1_v02.docx" document.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.1, Section 2.3, table 7: The PP has updated revised MR as regards to the cluster, total no. of sub-cluster and total sample size for BUS 2018.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	C2		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 2.4, table 9: 5. VPA-2 shall start with year 1 instead of year 8. 6. The data for provinces Bali, Lampung, NTT, NTB, South Sulawesi, and Yogyakarta are not included. 7. The correspondence data in BUS 2018 tabulation spreadsheet to be updated accordingly.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. Table 9 has been deleted as VPA-2 cannot have an age group 1 – it is too early for this. As the BUS was planned for Q3 2017 and the Gold Standard defines an age group as operational for 6 months+, VPA-2 will only have a first age group in the next MP. 2. This is due to the sampling, which does not enable 100% coverage of all 9 provinces for each one of the 8 age groups. This is not relevant anymore since no age group will be reported for the purpose of MPI. 3. Document "20180407 BUS 2018 Tabulation JRI.xls" has been updated to clarify the separation between VPA-1 results and VPA-2 results.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 2.4: 1. Table 9 is deleted since the are no age group as explain above. 2. As explain above, there is no age group to select for sampling to obtain a 100% survey for all provinces. This could happen during MPII. 3. The correspondence data in BUS 2018 tabulation spreadsheet is updated accordingly.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	C3		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 2.3, table 10: The description for clusters does reflect the VPA monitoring period.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Table 10 has been deleted for the same reason as under CAR C2 – MPI of VPA-2 cannot have any age groups as it is too early stage. Next year the BUS will include the first age group for VPA-2.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 2.3, table 10: The table is deleted since there are no age group with the monitoring period just started for VPA2. Therefore, if appropriate.		

Finding	C3
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	C4		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1, Usage rate, 1. Table 15: The reported non-functioning is not applicable for this monitoring period. 2. Table 16:Usage Survey results do not reflect the monitoring period which starts on 02/01/2017.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. Table 15 has been deleted as there is no age group and therefore drop-off to report for MPI of VPA-2. The biodigester at the time of surveying were only implemented for several months. 2. Table 16 of the MR has been adjusted to explain that a 0% drop-off rate is applied for MPI of VPA-2. No age group could be selected as the BUS was to be implemented in Q3 of 2017, while the GS required an age group to be only relevant after 6 months of operations. As such the first drop-offs will be included in MP2 of VPA-2.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1, Usage rate, 1. Table 15 is deleted since there is no age group for MP1 of VPA2. The digesters are implemented a few months for the monitoring period. 2. Table 16: Usage Survey results are updated since there is no age group with the no drop-off rate for the monitoring period.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	D1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1.1, Parameter $U_{p1,y}$: 1. The applied value does not reflect the monitoring period since VPA start date from 02/01/2017. 2. The referred source cell data spreadsheet to be corrected accordingly.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. Parameter $U_{p1,y}$ has been updated to 100% since there is no drop-off reported for MPI. 2. The reference has been updated accordingly.		

Finding	D1
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1.1, Parameter $U_{p1,y}$: 1. The applied value is updated to reflect the monitoring period of the VPA start date from 02/01/2017. 2. The referred source cell data spreadsheet is updated accordingly.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	D2		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1.1, Parameter $N_{p1,y}$: 1. The applied value does not reflect the monitoring period since VPA start date from 02/01/2017 2. The value of the reference source to be corrected.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. Parameter $N_{p1,y}$ has been updated accordingly. 2. The reference remains unchanged as it relates to the calculation cell.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1.1, Parameter $N_{p1,y}$: 1. The applied value is updated to reflect the monitoring period of the VPA start date from 02/01/2017 2. The value of the reference source remains unchanged since it relates the calculation cell.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	D3		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1.1, Parameter $No_{p1,y}$: The number of units to be corrected. Refer findings CAR B3.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Parameter $No_{p1,y}$ has been updated accordingly to the full number of 1,990 units.		

Finding	D3
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1.1, Parameter $N_{op1,y}$: The number of units are corrected with the correction of CAR B3.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	D4		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1.1, Parameter $O_{p1,y}$: Clarification requested on the applied value since the VPA monitoring period starts from 02/01/2017		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Parameter $O_{p1,y}$ remains unchanged as this relates to the overall operation rate that is applied across all units. However to account for the fact that in January 2017 ER generation started from 02/01 rather than 01/01, Cell C12 of "20180430 ER Calculation VPA 2 MP1_v02.xls" sheet "Cumulative VER" has been updated to include an additional division of (30/31), which reduces the ER for January from 53 to 52 tonnes.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1.1, Parameter $O_{p1,y}$: The applied value fare updated with the VPA monitoring period starts from 02/01/2017. Thus, a reduction in ERs for month of January.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	D5		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1 Section 3.1.1, Parameter $N_{,T,h}$: Clarification for footnote 37 on pigs data captured during survey was not justified why not included in data.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Reference to the exclusion of pigs has been added to the footnote.		

Finding	D5
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2 Section 3.1.1, Parameter $N_{,T,h}$: Footnote 37 is updated to include pigs.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☒ Additional action should be taken (finding remains open) ☐ The finding is closed

Finding	D6		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1 Section 3.1.1, Parameter Bio: The reference cell of the spreadsheet is incorrect.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The reference has been updated to “BUS 2018 Tabulation JRI.xls” sheet “BUS” cell OX216		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2 Section 3.1.1, Parameter Bio: The reference cell of the spreadsheet is corrected and consistent with the BUS cell OX216..		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	E1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1.5, table 28: The Head / average biodigester for dairy cows shall be adjusted with clarification of CAR.D3		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	This issue was clarified with JRI. As per the response shared with the DOE on 03 May 2018, the head count for the dairy cows is correct (Cell MC212). Column MD refers to how many dairy cows were reported by households before a biodigester was installed.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.1, Section 3.1.5, table 28: The Head / average biodigester for dairy cows has been adjusted with correction of CAR.D3		

Finding	**E1**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	**E2**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1.5, table 35. The data for number 4.94 is inconsistent with the ER spreadsheet.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The number in Table 35 has been corrected to 4.59. The rest of the numbers are not affected and therefore remain the same, this was just a typo.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1.5, table 35. The data is corrected to 4.59 and consistent with the ER spreadsheet.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	**E3**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.16, table 38: 1. For conservative, the PE for bioslurry shall be included. 2. The ER spreadsheet shall be corrected to include item 1 above accordingly. 3. The data in respective tables of MR shall be corrected.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. For conservativeness, PE from bio-slurry has been now accounted for. See updated text at the end of Section 3.1.5 of the MR v.02 as well as Cell H45 of the ER calculation sheet “Bio-slurry 2018” and Cell E80 of sheet “GS VER 2018”. 2. See answer above, this has been updated. 3. The MR has been updated for this information. See “20180430 IDBP VPA-2 MP1_v02.docx”		

Finding	**E3**
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.16, table 38: 1. The PE for bioslurry is included in ER calculation, thus reduce the ER emissions. 2. The ER spreadsheet is corrected to include item 1 above. 3. The data in respective tables of MR are corrected accordingly
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	**E4**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1.6: The monitoring period stated below table 39 is incorrect.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The date has been adapted to 02/01/2017 here as well as in other tables throughout the MR v.02.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1.6: The monitoring period stated below table 39 is corrected.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	**E5**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1.7: The reference section for the sentence below table 41 is not traceable.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	there is no such section therefore the reference to this section has been deleted from the MR.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1.7: The reference is deleted since it was available.		

Finding	**E5**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	**E6**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	ER Calculation VPA-2 MP1 v 0.1 spreadsheet, GS VER 2018 sheet: 1. The number of units shall be corrected with the correction of CAR B3. 2. The data source for 4.58% and 1030 in cell E77 are not traceable.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. The number of units has been updated to the new amount. Specifically, Cell C7 has been reduced by 283 units that have now been added to November and December 2016 in VPA-1. 2. Cell E77 has been updated to include the calculation (6/131) rather than absolute figure of 4.58%. This relates to the 6 hhs out of 131 surveyed in the Leakage Assessment that reported the use of more biomass. A further clarification has been added to Cell G77.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	ER Calculation VPA-2 MP1 v 0.2 spreadsheet, GS VER 2018 sheet: 1. The number of units are corrected with the correction of CAR B3. 2. The data in cell E77 is updated. The PP has included a clarification to demonstrate the source of the date applied in calculating data in cell E77.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	**F1**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 4.2.1, GS Indicator GS-03: 1. The number of units to be corrected with correction of CAR B3 2. The reference cell stated in footnote 70 is not traceable.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. The number has been updated accordingly to reflect a lower number of units. 2. "20180407 BUS 2018 Tabulation JRI.xls" sheet "BUS" Cell OY216 has been modified to make the number traceable.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 4.2.1, GS Indicator GS-03: 1. The number of units are corrected with correction of CAR B3. 2. The reference cell stated in footnote 70 is updated and traceable.		

Finding	**F1**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	**F2**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 4.1.2, GS Indicator GS-06: The cell reference in foot 71 is inconsistent with the referred spreadsheet.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The footnoted reference has been updated to reflect the correct linkage.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 4.1.2, GS Indicator GS-06: The cell reference in foot 71 is corrected and consistent with the referred spreadsheet.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	**F3**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Table 17 & Section 4.2.1, GS Indicator GS-07: 1. The number of units to be corrected with correction of CAR B3 2. The reference cells of 20180407 BUS 2018 Tabulation JRI" sheet "BUS" in table 17 and footnote 72 are incorrect.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. The values for GS-07 have been adjusted downwards accordingly. 2. Both the table and footnote have been updated for the correct reference.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Table 17 & Section 4.2.1, GS Indicator GS-07: 1. The number of units are corrected with correction of CAR B3. 2. The reference cells of 20180407 BUS 2018 Tabulation JRI" sheet "BUS" in table 17 and footnote 72 are corrected.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	**F4**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Table 17 & Section 4.2.1, GS Indicator GS-08: 1. The reference cells to "IDBP Database VPA-2 20Mar2018" sheet "Master VPA-2" in table 17 and footnote 73 are incorrect. 2. The number of units to be corrected with correction of CAR B3		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. Both the table and footnote have been updated for the correct reference. 2. The number of units has been adjusted downwards as a result of CAR B3.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Table 17 & Section 4.2.1, GS Indicator GS-08: 1. The reference cells to "IDBP Database VPA-2 20Mar2018" sheet "Master VPA-2" in table 17 and footnote 73 are corrected. 2. The number of units are corrected with correction of CAR B3		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	**F5**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 4.1.2, GS Indicator GS-10: The reference cell stated in footnote 74 is inconsistent with the reference in table 17.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The reference in the footnote has been corrected and the two references are now aligned.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 4.1.2, GS Indicator GS-10: The reference cell stated in footnote 74 has been corrected and consistent.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

VPA-2:

Finding	**B1**		
Classification	☒ CAR	☐ CL	☐ FAR

Finding	B1
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, All Sections: The start date of monitoring period for the VPA shall be as at 02/01/2017 according to GS final review report.
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The start date has been moved to 02/01. Please see the new MR "20180430 IDBP VPA-2 MP1_v02.docx"
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, All Sections: The start date of monitoring period for the VPA is corrected as 02/01/2017 according to GS final review report.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	B2		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, table 1: The start date of the crediting period to be corrected according to GS final review report as from 02/01/2017 to 01/01/2025 (both dates included).		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Table 1 of the new MR has been updated accordingly.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, table 1: The start date of the crediting period is corrected according to GS final review report as from 02/01/2017 to 01/01/2024 (both dates included).		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	B3		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, table 3: During review of database file, it was found there are digesters built in November & December 2016 shall be removed and report in VPA-1		

Finding	**B3**
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The VPA-2 database file has been updated to exclude the November and December 2016 units. This relates to a total of 283 units. All of these units were marked as '2017' in the original database file (column H) but actually were constructed in 2016 (column F). The ER calculation sheet has been updated to account for this – see Cell C7 of the "Cumulative VER" sheet. Furthermore, as a result this number has been deducted from the VPA-2 database file, accordingly. See updated file "IDBP Database VPA-2 20Mar2018.xls"
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, table 3: The databased is updated and removed digesters built in December 2016 and reported in VPA-1.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	**C1**		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 2.3, table 7: Clarifications requested for the cluster, total no. of sub-cluster and total sample size for BUS 2018 are derived.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	A clarification has been requested from JRI on this matter, and a response has been shared with the DOE on 03 May 2018 which confirms how the clusters are defined and how many sub-clusters there are. This information has been updated in table 7 accordingly in the "20180430 IDBP VPA-1 MP5_v02.docx" document.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 2.3, table 7: The PP has updated revised MR as regards to the cluster, total no. of sub-cluster and total sample size for BUS 2018.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	**C2**		
Classification	☒ CAR	☐ CL	☐ FAR

Finding	C2
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 2.4, table 9: 1. VPA-2 shall start with year 1 instead of year 8. 2. The data for provinces Bali, Lampung, NTT, NTB, South Sulawesi, and Yogyakarta are not included. 3. The correspondence data in BUS 2018 tabulation spreadsheet to be updated accordingly.
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. Table 9 has been deleted as VPA-2 cannot have an age group 1 – it is too early for this. As the BUS was planned for Q3 2017 and the Gold Standard defines an age group as operational for 6 months+, VPA-2 will only have a first age group in the next MP. 2. This is due to the sampling, which does not enable 100% coverage of all 9 provinces for each one of the 8 age groups. This is not relevant anymore since no age group will be reported for the purpose of MPI. 3. Document "20180407 BUS 2018 Tabulation JRI.xls" has been updated to clarify the separation between VPA-1 results and VPA-2 results.
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 2.4: 1. Table 9 is deleted since the are no age group as explain above. 2. As explain above, there is no age group to select for sampling to obtain a 100% survey for all provinces. This could happen during MPII. 3. The correspondence data in BUS 2018 tabulation spreadsheet is updated accordingly.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	C3		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 2.3, table 10: The description for clusters does reflect the VPA monitoring period.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Table 10 has been deleted for the same reason as under CAR C2 – MPI of VPA-2 cannot have any age groups as it is too early stage. Next year the BUS will include the first age group for VPA-2.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 2.3, table 10: The table is deleted since there are no age group with the monitoring period just started for VPA2. Therefore, if appropriate.		

Finding	C3
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	C4		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1, Usage rate, 1. Table 15: The reported non-functioning is not applicable for this monitoring period. 2. Table 16:Usage Survey results do not reflect the monitoring period which starts on 02/01/2017.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. Table 15 has been deleted as there is no age group and therefore drop-off to report for MPI of VPA-2. The biodigester at the time of surveying were only implemented for several months. 2. Table 16 of the MR has been adjusted to explain that a 0% drop-off rate is applied for MPI of VPA-2. No age group could be selected as the BUS was to be implemented in Q3 of 2017, while the GS required an age group to be only relevant after 6 months of operations. As such the first drop-offs will be included in MP2 of VPA-2.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1, Usage rate, 1. Table 15 is deleted since there is no age group for MP1 of VPA2. The digesters are implemented a few months for the monitoring period. 2. Table 16: Usage Survey results are updated since there is no age group with the no drop-off rate for the monitoring period.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	D1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1.1, Parameter $U_{p1,y}$: 1. The appliied value does not reflect the monitoring period since VPA start date from 02/01/2017. 2. The referred source cell data spreadsheet to be corrected accordingly.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. Parameter $U_{p1,y}$ has been updated to 100% since there is no drop-off reported for MPI. 2. The reference has been updated accordingly.		

Finding	D1
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1.1, Parameter $U_{p1,y}$: 1. The appliied value is updated to reflect the monitoring period of the VPA start date from 02/01/2017. 2. The referred source cell data spreadsheet is updated accordingly.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	D2		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1.1, Parameter $N_{p1,y}$: 1. The applied value does not reflect the monitoring period since VPA start date from 02/01/2017 2. The value of the reference source to be corrected.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. Parameter $N_{p1,y}$ has been updated accordingly. 2. The reference remains unchanged as it relates to the calculation cell.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1.1, Parameter $N_{p1,y}$: 1. The applied value is updated to reflect the monitoring period of the VPA start date from 02/01/2017 2. The value of the reference source remains unchanged since it relates the calculation cell.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	D3		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1.1, Parameter $No_{p1,y}$: The number of units to be corrected. Refer findings CAR B3.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Parameter $No_{p1,y}$ has been updated accordingly to the full number of 1,990 units.		

Finding	D3
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1.1, Parameter $N_{op1,y}$: The number of units are corrected with the correction of CAR B3.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	D4		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1.1, Parameter $O_{p1,y}$: Clarification requested on the applied value since the VPA monitoring period starts from 02/01/2017		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Parameter $O_{p1,y}$ remains unchanged as this relates to the overall operation rate that is applied across all units. However to account for the fact that in January 2017 ER generation started from 02/01 rather than 01/01, Cell C12 of "20180430 ER Calculation VPA 2 MP1_v02.xls" sheet "Cumulative VER" has been updated to include an additional division of (30/31), which reduces the ER for January from 53 to 52 tonnes.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1.1, Parameter $O_{p1,y}$: The applied value fare updated with the VPA monitoring period starts from 02/01/2017. Thus, a reduction in ERs for month of January.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	D5		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1 Section 3.1.1, Parameter $N_{,T,h}$: Clarification for footnote 37 on pigs data captured during survey was not justified why not included in data.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Reference to the exclusion of pigs has been added to the footnote.		

Finding	D5
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2 Section 3.1.1, Parameter $N_{,T,h}$: Footnote 37 is updated to include pigs.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	D6		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1 Section 3.1.1, Parameter Bio: The reference cell of the spreadsheet is incorrect.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The reference has been updated to “BUS 2018 Tabulation JRI.xls” sheet “BUS” cell OX216		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2 Section 3.1.1, Parameter Bio: The reference cell of the spreadsheet is corrected and consistent with the BUS cell OX216..		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	E1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1.5, table 28: The Head / average biodigester for dairy cows shall be adjusted with clarification of CAR.D3		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	This issue was clarified with JRI. As per the response shared with the DOE on 03 May 2018, the head count for the dairy cows is correct (Cell MC212). Column MD refers to how many dairy cows were reported by households before a biodigester was installed.		

Finding	E1
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.1, Section 3.1.5, table 28: The Head / average biodigester for dairy cows has been adjusted with correction of CAR.D3
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	E2		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1.5, table 35. The data for number 4.94 is inconsistent with the ER spreadsheet.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The number in Table 35 has been corrected to 4.59. The rest of the numbers are not affected and therefore remain the same, this was just a typo.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1.5, table 35. The data is corrected to 4.59 and consistent with the ER spreadsheet.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	E3		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.16, table 38: 1. For conservative, the PE for bioslurry shall be included. 2. The ER spreadsheet shall be corrected to include item 1 above accordingly. 3. The data in respective tables of MR shall be corrected.		

Finding	**E3**
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. For conservativeness, PE from bio-slurry has been now accounted for. See updated text at the end of Section 3.1.5 of the MR v.02 as well as Cell H45 of the ER calculation sheet "Bio-slurry 2018" and Cell E80 of sheet "GS VER 2018". 2. See answer above, this has been updated. 3. The MR has been updated for this information. See "20180430 IDBP VPA-2 MP1_v02.docx"
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.16, table 38: 1. The PE for bioslurry is included in ER calculation, thus reduce the ER emissions. 2. The ER spreadsheet is corrected to include item 1 above. 3. The data in respective tables of MR are corrected accordingly
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	**E4**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1.6: The monitoring period stated below table 39 is incorrect.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The date has been adapted to 02/01/2017 here as well as in other tables throughout the MR v.02.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1.6: The monitoring period stated below table 39 is corrected.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	**E5**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 3.1.7: The reference section for the sentence below table 41 is not traceable.		

Finding	**E5**
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	there is no such section therefore the reference to this section has been deleted from the MR.
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 3.1.7: The reference is deleted since it was available.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	**E6**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	ER Calculation VPA-2 MP1 v 0.1 spreadsheet, GS VER 2018 sheet: 1. The number of units shall be corrected with the correction of CAR B3. 2. The data source for 4.58% and 1030 in cell E77 are not traceable.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. The number of units has been updated to the new amount. Specifically, Cell C7 has been reduced by 283 units that have now been added to November and December 2016 in VPA-1. 2. Cell E77 has been updated to include the calculation (6/131) rather than absolute figure of 4.58%. This relates to the 6 hhs out of 131 surveyed in the Leakage Assessment that reported the use of more biomass. A further clarification has been added to Cell G77.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	ER Calculation VPA-2 MP1 v 0.2 spreadsheet, GS VER 2018 sheet: 1. The number of units are corrected with the correction of CAR B3. 2. The data in cell E77 is updated. The PP has included a clarification to demonstrate the source of the date applied in calculating data in cell E77.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	**F1**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 4.2.1, GS Indicator GS-03: 1. The number of units to be corrected with correction of CAR B3 2. The reference cell stated in footnote 70 is not traceable.		

Finding	**F1**
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. The number has been updated accordingly to reflect a lower number of units. 2. "20180407 BUS 2018 Tabulation JRI.xls" sheet "BUS" Cell OY216 has been modified to make the number traceable.
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 4.2.1, GS Indicator GS-03: 1. The number of units are corrected with correction of CAR B3. 2. The reference cell stated in footnote 70 is updated and traceable.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	**F2**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 4.1.2, GS Indicator GS-06: The cell reference in foot 71 is inconsistent with the referred spreadsheet.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The footnoted reference has been updated to reflect the correct linkage.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 4.1.2, GS Indicator GS-06: The cell reference in foot 71 is corrected and consistent with the referred spreadsheet.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	**F3**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Table 17 & Section 4.2.1, GS Indicator GS-07: 1. The number of units to be corrected with correction of CAR B3 2. The reference cells of 20180407 BUS 2018 Tabulation JRI" sheet "BUS" in table 17 and footnote 72 are incorrect.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. The values for GS-07 have been adjusted downwards accordingly. 2. Both the table and footnote have been updated for the correct reference.		

Finding	F3
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Table 17 & Section 4.2.1, GS Indicator GS-07: 1. The number of units are corrected with correction of CAR B3. 2. The reference cells of 20180407 BUS 2018 Tabulation JRI" sheet "BUS" in table 17 and footnote 72 are corrected.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Finding	F4		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Table 17 & Section 4.2.1, GS Indicator GS-08: 1. The reference cells to "IDBP Database VPA-2 20Mar2018" sheet "Master VPA-2" in table 17 and footnote 73 are incorrect. 2. The number of units to be corrected with correction of CAR B3		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. Both the table and footnote have been updated for the correct reference. 2. The number of units has been adjusted downwards as a result of CAR B3.		
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Table 17 & Section 4.2.1, GS Indicator GS-08: 1. The reference cells to "IDBP Database VPA-2 20Mar2018" sheet "Master VPA-2" in table 17 and footnote 73 are corrected. 2. The number of units are corrected with correction of CAR B3		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

Finding	F5		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	MR version 0.1, Section 4.1.2, GS Indicator GS-10: The reference cell stated in footnote 74 is inconsistent with the reference in table 17.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The reference in the footnote has been corrected and the two references are now aligned.		

Finding	**F5**
Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and VT assessments (#2, #3, etc.) shall be added.*	MR version 0.2, Section 4.1.2, GS Indicator GS-10: The reference cell stated in footnote 74 has been corrected and consistent.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next 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 project activity.

Table 5-1: Project Parties and project participants

Characteristic	Party	Project Participant
Non-Annex 1	Indonesia	HIVOS Indonesia
Annex 1	Netherlands	HIVOS Netherlands

5.2. Implementation of the project

During the verification, a site visit was carried out from 2018-04-30 to 2018-05-04. On the basis of this site visit and the reviewed project documentation it can be confirmed that w.r.t. the realized technology, the project equipment the project has been implemented and operated as described in the GS registered PoA-DD, VPA-DDs and GS Passports.

This is the 5th monitoring period for VPA-1 from 2017-01-01 to 2017-12-31 (both days inclusive) and 1st monitoring period for VPA-2 from 2017-01-02 to 2017-12-31 (both dates inclusive).

There are no new digesters installed for this 5th monitoring period for VPA-1. The total number of bio-digesters commissioned as at 2016-12-31 were 20,253 units.

There are 1,990 digesters built and commissioned for VPA-2 as at 2017-12-31.

During this monitoring period, there were 2,843 units were non-operational with a weighted average results of drop-off rate was 85.96% for VPA-1. These drop-off units were excluded in the carbon emissions calculation. The survey data was reviewed to confirm the percentage of non-operation units for each group.

There was no drop-off for VPA-2 since the implementation started on 02/01/2017.

VPA-1: Refer CAR B1 raised and closed out.

VPA-2: Refer CAR B1, CAR B2 and CAR B3 raised and closed out.

5.3. Project history

VPA-1

During the validation the validating DOE might have raised issues that could not be closed or resolved during the validation stage. For this purpose, FARs might have been raised. All FARs raise during the validation have been addressed by the verifying DOE during the 1st verification

During the 1st verification of MPI, the verifying DOE and GS have raised several FARs. All FARs raise were closed out during the 2nd verification.

During the 2nd verification FAR E7 was raised for consideration in this 3rd verification. The leakage assessment has been conducted and the project emissions for the previous monitoring periods have been retroactively calculated and included in the ER calculations. Thus, it is reflected in the ERs for the 3rd monitoring period.

During the 3rd verification, FAR D5 was raised and was not addressed. In addition, during GS issuance review, a FAR #1 was raised as regards to cover all the provinces where bio-digesters were constructed when conduct simple random sample survey for next verification. The FAR was addressed appropriately and closed out through CAR raised.

During the 4th verification, GS has raised FAR#1 as regards to each of the monitoring and usage survey shall cover all the involved provinces of the project activity. /GSIRVPA1/

The DOE could conclude the monitoring and usage survey conducted in December 2017 covers all nine (9) provinces. /BUS/

PoA-DD:

FAR1: The application of sludge/slurry shall be monitored according the applied methodology. If there is any anaerobic use/storage of bio slurry under anaerobic conditions reported from monitoring survey, the PP shall account the project emission accordingly. The PP can propose a method to account the emissions.

Bioslurry has been accounted as project emissions and deducted. Refer ER spreadsheet of VPA-2.

VPA-2:

There was no FAR raised by GS during the review of the registration during inclusion of the VPA-2. /GSI

The following FARs were raised by the validating DOE /RVP2/:

FAR1: The application of sludge/slurry shall be monitored according the applied methodology. If there is any anaerobic use/storage of bio slurry under anaerobic conditions reported from monitoring survey, the PP shall account the project emission accordingly. The PP can propose a method to account the emissions.

Bioslurry has been accounted as project emissions and deducted in the final ER calculations. Refer ER spreadsheet. The method measurement is described in Section 3.1.6 of MR.

FAR2: Refer to Table 4 & 5 of the VPA-DD. Since the project has not yet started, some of the evidences for the justification of eligibility criteria compliance are not yet available at validation. All the missing evidences are expected to available when VPA-2 enters into operation. The relevant criteria shall be verified by the DOE at the first verification.

All relevant data are included in VPA-2 database and made available during the verification. All eligible criterion is met and in accordance to the PoA–DD.

It could be concluded the 2 FARs raised are closed out.

Post registration changes

No post registration changes applicable for this monitoring period have been observed for both VPA-1 and VPA-2.

5.4. Compliance with the monitoring plan

The monitoring system and all applied procedures are in compliance to monitoring plan of the registered GS VPA-DDs and GS PoA-DD. Evidence was available to the verification team to check the compliance of the monitoring plan.

The reporting procedures reflect the requirements of the monitoring plan for the carbon monitoring and sustainability development criteria. All relevant data stored is for the whole monitoring period and traceable to the computer server at the PP office.

5.5. Compliance with the monitoring methodology

The monitoring system is in compliance with the applied monitoring methodology “Technologies and practices to displace decentralized thermal energy consumption”, version 1.0.

5.6. Carbon Monitoring parameters

During the verification all relevant monitoring parameters (as listed in section B.6.1 of VPA1DD and section D.7.1 of VPA2DD) 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.

Data and parameters monitored:

VPA-1:

Parameter	Monitored Value	Verification Opinion
$U_{p1,y}$: Cumulative usage rate for technologies in project scenario p1 in year	85.96%	The data is the calculated weighted average based on the age group percentage of units in operation.

Parameter	Monitored Value	Verification Opinion
y, based on cumulative adoption rate and drop off rate (fraction)		Age group 1: 78.79% Age group 2: 76.47% Age group 3: 75.00% Age group 4: 90.32% Age group 5: 90.63% Age group 6: 86.67% Age group 7: 90.00% The age group results are derived from the usage survey report. /BUS/
$N_{p1,y}$: Cumulative project operational rate included in the project database for project scenario p1 against baseline scenario b1 in year y	17,383	The data is the number of units in operation for the monitoring period. The data is calculated using the usage survey results, the number of days units are in operation in a year. /BUS/ 20180620 ER Calculation VPA 1 MP5_v01v02" sheet GS VER 2018" cell E86/ERVPA1/
$No_{p1,y}$: Cumulative number of project technologies included in the project database for project scenario p1 in year y	20,253	The data is the total number of biodigesters installed as at 2016-12-31 derived from the project database. /VPA1DB/ "IDBP Database VPA-1 20Mar2018" sheet "Master VPA-1" cell R20444/ERVPA1
$O_{p1,y}$: The average technology-days during which the biodigesters are operational for project scenario p1 against baseline scenario b1 in year y	364.71	The data is calculated as shown in footnote[1] below. The data is derived from "20180620 ER Calculation VPA 1 MP5_v02" sheet GS VER 2018" cell E85 /ERVPA1/
$LE_{p1,y}$: Leakage in project scenario p1 during year y	0.037 tCO_2e/year	A leakage assessment has been conducted as part of the BUS 2018. The results reported 4.58% of the households use more firewood was applied to determine the leakage per year. /L1/ Emission reduction calculation 20180620 ER Calculation VPA 1 MP5_v02" sheet GS VER 2018" cell E77/ERVPA1/
$N_{T,h}$: Number of animals of livestock category T in premise h	Dairy cow: 4.59	The data is derived from "20180407 BUS 2018 Tabulation JRI" sheet BUS, cell MC212
	Market swine: 0	During this monitoring period, in the usage survey conducted, however, the market swine households in the survey list is taken into

[1] Calculated as 365 - (malfunctioning digesters * maximum amount of days of malfunctioning)/ $No_{p1,y}$, therefore = 365 – ((395*15)/ 20,253) = 364.71

Parameter	Monitored Value	Verification Opinion
		account for the drop-off rate and not in the monitoring survey. Therefore, no data is captured.
PL: Physical leakage of the biodigester	10%	The value is default data derived from the registered GS VPA-DD section 6.1.
$BB_{b1,bio}$: Amount of woody biomass used in the baseline scenario b1	1.435 t/y	The data is derived from the KPT survey conducted on 2017-12-14 and 2017-12-24 applicable for this monitoring period. /KPT/ 20180407 KPT December 2017" sheet 90-30 Test, cell F65/KPT/
$BB_{p1,bio}$: Quantity of biomass consumed in project scenario p1 during year y	0.719 t/y	The data is derived from the KPT survey conducted on 2017-12-14 and 2017-12-24 applicable for this monitoring period. /KPT/ "20180407 KPT December 2017" sheet 90-30 Test, cell S65 /KPT/
$BB_{b1,fuel}$: Amount of fossil fuels used in the baseline scenario b1	LPG: 0.088 t/y	The data is derived from the KPT survey conducted on 2017-12-14 and 2017-12-24 applicable for this monitoring period. /KPT/ "20180407 KPT December 2017" sheet 90-30 Test, cell I65 /KPT/
$BB_{p1,fuel}$: Quantity of fossil fuel consumed in project scenario p1	LPG: 0.048 t/y	The data is derived from the KPT survey conducted on 2017-12-14 and 2017-12-24 applicable for this monitoring period. /KPT/ "20180407 KPT December 2017" sheet 90-30 Test, cell V65 /KPT/
$MS_{P,S,K}$: Fraction of livestock category T's manure not treated in bio-digester, in climate region k	Dairy cow: 19.0%	The data is based on the usage survey results as shown in the Primary data BUS 2018 /BUS/ BUS Report 2018, page 4
	Market swine: 0%	During this monitoring period, in the usage survey conducted, the market swine households in the survey list was considered for the drop-off rate since no monitoring survey was conducted. Therefore no data determined.
$MS_{T,S,k}$: Fraction of livestock category T's manure fed into the bio-digester, S in climate region k	Dairy cow: 81.0%	The data is based on the results shown in BUS Report 2018, page 4 /BUS/
	Market swine: 0%	During this monitoring period, in the usage survey conducted, the market swine households in the survey list was considered for the drop-off rate since no monitoring survey was conducted. Therefore no data determined..

Parameter	Monitored Value	Verification Opinion
GWP_{CH4}: Global Warming Potential of methane	25	The data is a default value applicable for the 2nd commitment period as from 2013-01-01 and derived from IPCC[2].
Bio: Use of bio-slurry	69%	The data is based on the usage survey results as shown in ""BUS "20180407 BUS 2018 Tabulation JRI" sheet "BUS" cell ON235 /BUS/

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.

Refer CAR D1, CAR D2 and CAR D3 raised and closed out.

VPA-2:

Parameter	Monitored Value	Verification Opinion
$U_{p1,y}$: Cumulative usage rate for technologies in project scenario p1 in year y, based on cumulative adoption rate and drop off rate (fraction)	90%	There are no age group since this is the 1st monitoring period for the VPA. 20180407 BUS 2018 Tabulation JRI" sheet "BUS" cell H232 /BUS/
$N_{p1,y}$: Cumulative project operational rate included in the project database for project scenario p1 against baseline scenario b1 in year y	1,786	The data is the number of units in operation for the monitoring period that derived from 201800706 ER Calculation VPA 2 MP1_v03" sheet GS VER 2018" cell E86 /ERVPA2/
$No_{p1,y}$: Cumulative number of project technologies included in the project database for project scenario p1 in year y	1,990	The data is the total number of biodigesters installed as at 2017-12-31 was derived from the project database. /VPA2DB/ "IDBP Database VPA-2 20Mar2018" sheet "Master VPA-2" cell R2027
$O_{p1,y}$: The average technology-days during which the biodigesters are operational for project scenario p1 against baseline scenario b1 in year y	363.98	The data is calculated as shown in footnote[3] below. The data is derived from 201807060 ER Calculation VPA 2 MP1_v03" sheet GS VER 2018" cell E85

[2] Available on: http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html

[3] Calculated as 365 - (malfunctioning digesters * maximum amount of days of malfunctioning)/ $No_{p1,y}$, therefore = 365 – ((3*15)/ 1,990) = 364.98

Parameter	Monitored Value	Verification Opinion
$LE_{p1,y}$: Leakage in project scenario p1 during year y	0.037 tCO_2e/year	A leakage assessment has been conducted as part of the BUS 2018. The results reported 4.58% of the households use more firewood was applied to determine the leakage per year. /L1/ 20180706 ER Calculation VPA 2 MP1_v03" sheet GS VER 2018" cell E77/ERVPA2
$N_{T,h}$: Number of animals of livestock category T in premise h	Dairy cow: 4.59	The data is derived from 20180407 BUS 2018 Tabulation JRI" sheet BUS, cell MC212. /BUS/
	Market swine: 0	During this monitoring period, in the usage survey conducted there were no capture data market swine.
PL: Physical leakage of the biodigester	10%	The value is default data derived from the registered VPA-2 DD section B.7.1
$BB_{b1,bio}$: Amount of woody biomass used in the baseline scenario b1	1.435 t/y	The data is derived from 20180407 KPT December 2017" sheet 90-30 Test, cell F65. /KPT/
$BB_{p1,bio}$: Quantity of biomass consumed in project scenario p1 during year y	0.719 t/y	The data is derived from the KPT survey conducted on 2017-12-14 and 2017-12-24 applicable for this monitoring period. /KPT/ "20180407 KPT December 2017" sheet 90-30 Test, cell S65 /KPT/
$BB_{b1,fuel}$: Amount of fossil fuels used in the baseline scenario b1	LPG: 0.088 t/y	The data is derived from the KPT survey conducted on 2017-12-14 and 2017-12-24 applicable for this monitoring period. /KPT/ "20180407 KPT December 2017" sheet 90-30 Test, cell I65 /KPT/
$BB_{p1,fuel}$: Quantity of fossil fuel consumed in project scenario p1	LPG: 0.048 t/y	The data is derived from the KPT survey conducted on 2017-12-14 and 2017-12-24 applicable for this monitoring period. /KPT/ 20180407 KPT December 2017" sheet 90-30 Test, cell V65 /KPT/
$MS_{P,S,K}$: Fraction of livestock category T's manure not treated in bio-digester, in climate region k	Dairy cow: 19.0%	The data is based on the usage survey results as shown in the Primary data BUS 2018 /BUS/ BUS Report 2018, page 4
	Market swine: 0%	During this monitoring period, in the usage survey conducted there were no capture data market swine.
$MS_{T,S,k}$: Fraction of livestock category T's manure fed	Dairy cow: 81%	The data is based on the results shown in BUS Report 2018, page 4. /BUS/

Parameter	Monitored Value	Verification Opinion
into the bio-digester, S in climate region k	Market swine: 0%	During this monitoring period, in the usage survey conducted there were no capture data market swine
GWP_{CH4}: Global Warming Potential of methane	25	The data is a default value applicable for the 2nd commitment period as from 2013-01-01 and derived from IPCC[4].
Bio: Use of bio-slurry	69%	The data is based on the usage survey results as shown in "20180407 BUS 2018 Tabulation JRI" sheet "BUS" cell ON235 /BUS/

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.

Refer CAR D1, CAR D2, CAR D3, CAR D4, CAR D5 and CAR D6 raised and closed out.

Data and parameters not monitored:

The ex-ante parameters for VPA-1 in table 18 of MR are derived from section B.5.1 of the registered VPA-DD version 7.0 applicable for the current crediting period from 31/05/2011 to 30/05/2018.

The ex-ante parameters for VPA-1 in table 18 are derived from section D.7.1 of the registered VPA-DD version 1.3 for the current crediting period from 02/01/2017 to 01/01/2024.

5.7. Monitoring report(s)

A GS Monitoring Report along with relevant supporting documents was submitted to the verification team by the project participants. These documents form the basis for the verification opinion of TÜV NORD.

During the verification, mistakes and needs for clarification were identified. The PP has carried out the requested corrections so that it can be confirmed that the Monitoring report is complete and transparent and accordance with the registered VPA-DDs, the GS PoA Passport and relevant GS requirements.

[4] Available on: http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html

5.8. Sampling

5.8.1. Implementation of the sampling plan

The PP has taken the approach for the sampling plan by adopting EB69 Annex 5 which includes level of assurance.

The biogas usage survey has a design confidence precision level of at least 90/10 according to the GS requirement. The BUS sample size for VPA-1 was 240 households with 222 households were visited and includes 3 households were interviewed via telephone for usage survey to meet the minimum age group requirements. There were 7 age groups of 30 households per age group making a total of 210 as minimum thresholds. Therefore, the total 225 households visited and telephone interviewed exceeds the minimum threshold.

For VPA-2 has 1 age group and 30 households were selected. 28 households were visited for BUS survey and 2 households were telephone interviewed for usage survey. Therefore, meet the minimum age group requirement.

For the PFT and BFT a sample size of 55 each were selected with a total of 110 households.

The verification team has checked on the sampling plan and considered appropriate since an addition of 10% has been included to ensure the level of assurance and the number of households is representative.

VPA-1: Refer CL C1, CAR C2, CAR C3 and CAR C4 raised and closed out.

VPA-2: Refer CL C1, CAR C2, CAR C3 and CAR C4 raised and closed out.

5.8.2. Sampling approaches during verification

The verification team has applied the sampling plan based on 90/10 confidence level to ensure the households interviewed are representative to meet GS requirements. The number of installed units as at 31/12/2017 for VPA-1 is 20,253 and 1,990 for VPA-2. Using the link http://www.raosoft.com/samplesize.html to calculate the sample size, 68 households will be sufficient to obtain a confidence level of 90.

The verification team has selected a sample size of 325 households from the clusters in the different villages, different districts & different provinces. Out of the 325 householders, 102 householders were visited for onsite inspection and interviewed whilst 223 householders were interviewed via telephone. /LHH/

From the results from 102 interviewed households, it could confirm the following:

1. The usage of bio-slurry for farming activities or make into compost for selling;
2. Living conditions with savings with the free biogas for cooking;
3. Reduce usage of wood and LPG;
4. A proper system to treat the animal manure;

Therefore, the sample size is representative based on the results obtained.

5.9. ER Calculation

During the verification mistakes in the ER calculation were identified. Corresponding CARs were raised. A revised ER calculation was prepared by the PP and presented to the verification team. All raised issues were addressed appropriately so that all corresponding CARs could be closed out. Thus it is confirmed that the ER calculation is overall correct.

Baseline Emissions:

The baseline emissions have 2 components as follows:

1. Emissions from displacement of fossil fuels and non-renewable biomass fuel.

   These emissions are the comparing of fuel consumption in a project scenario to the baseline scenario according to the registered GS VPA-DD.

   In the baseline scenario the fossil fuel is LPG and kerosene whilst the non-renewable fuel is firewood.

   The equation applied:

   $\sum BE_{b1,CO2,y} = B_{b1,y} * ((f_{NRB,y} * EF_{b1,fuel,CO2}) + EF_{b1,fuel,nonCO2}) * NVC_{b1,fuel}$

   The inputs for the fuel usage data are derived from the KPT survey.

   Baseline emission for this component for both VPA-1 and VPA-2 is 1.825 $tCO_2e/y/hh$.

2. Emissions due to the avoidance of methane emissions from manure handling using the IPCC 2006 Tier 1 approach.

   The equation applied:

   $BE_{b1,CH4,y} = GWP_{CH4} * \sum_T (EF_{awms,T} * N_{T,h})$

   The inputs for the type of animals and average population of animals are from the usage survey.

   Baseline emission for this component for both VPA-1 and VPA-2 is 3.557 $tCO_2e/y/hh$.

Project Emissions:

The project emissions are contributed from:

1. Continue use of baseline scenario fossil fuel and firewood in the project scenario;

   The equation applied:

   $PE_{p1,CO2,y} = \Sigma (BB_{p1,fuel} * NCV_{fuel} * EF_{p1,fuel}) + (BB_{p1,bio} * NCV_{bio} * EF_{p1,fuel} * f_{NRB})$

   The inputs for the fuel usage data are derived from the KPT survey.

Project emission for this situation for both VPA-1 and VPA-2 is 0.926 $tCO_2e/y/hh$.

2. Physical leakage of biogas from the biodigester and incomplete combustion of biogas;

   The equation applied:

   $PE_{p1,CH4,y} = GWP_{CH4} * \sum (N_{T,h,y} * EF_{awms,T}) * PL_y + \sum (N_{T,h,y} * EF_{awms,T}) * (1- \eta_{new\ stove}) (1- PL_y) + PE_{awms,NT}$

   The input for the type of animals and number of animals are from the usage survey.

   The default value of 10% applied for physical leakage of biodigester.

   The animal waste not treated in the bio-digester in the project scenario is considered as zero since the non-treated animals in the project scenario will have the same situation as they would have had in the baseline.

   Project emission for this situation is 1.956 $tCO_2e/y/hh$ for both VPA-1 and VPA-2.

3. Emissions from bio-slurry:

   In the ER spreadsheet, the CME has demonstrated the steps for the calculating the emissions for bio-slurry. The data applied in the calculation are derived from:

   1. 2006 IPCC default value for animal excretion amount, MCF and methane potential;
   2. The average head count of animals type are based on the usage survey results; /BUS/
   3. The digester efficiency is based on the study report and IPCC data; /O1/

   The calculated emission for bio-slurry is 0.014 $tCO_2e/y/hh$ for VPA-1 and VPA-2.

Leakage:

The PP has conducted a leakage survey for this monitoring period and the calculated value is 0.037 $tCO_2e/y/hh$ for both VPA-I and VPA-2.

Emission Reduction:

The emission reduction for one household is calculated for this monitoring period as follows for both VPA-1 and VPA-2:

1. Emission reductions from fuel switch.

$$ER_{CO2,y} = BE_{b1,CO2,y} – PE_{p1,CO2,y} – LE_{p1,CO2,y}$$
$$= 1.825 – 0.926 – 0.037$$
$$= 0.862\ tCO_2e/y/hh$$

2. Emission reductions from waste management (excluding PE from bio-slurry).

$ER_{CH4,y}$ = $BE_{b1,CH4,y} – PE_{p1,CH4,y} – LE_{p1,CH4,y}$

= 3.557 – 1.956 – 0

= 1.586 $tCO_2e/y/hh$

3. Emissions from Bio-slurry for this monitoring period for both VPA-1 and VPA-2 is 0.014 $tCO_2e/y/hh$

Thus the ER for each household for this monitoring period:

ER_{Total} = $ER_{CO2,y} + ER_{CH4,y} - PE_{bio-slurry}$

= 0.862 + 1.586 – 0.014

= 2.448 $tCO_2e/y/hh$. (Rounded down to next integral)

Therefore, the cumulative emission reductions for this monitoring period are determined as below:

VPA-1:

ER_{Total} = $(ER_{CO2,y} + ER_{CH4,y} - PE_{bio-slurry}) * N_{p1,y} * U_{p1,y}$

= **42,590 tCO_2e**

VPA-2:

ER_{Total} = $(ER_{CO2,y} + ER_{CH4,y} - PE_{bio-slurry}) * N_{p1,y} * U_{p1,y}$

= **2,332 tCO_2e**

To be conservative, the total baseline emissions for biogas extracted are rounded down as integer. Project emissions are rounded-up to the next integer.

To conclude, from the reviewed and replication of data input to the ER calculation, it can be confirmed the data stated in the MR is overall correct.

VPA-1: Refer CAR E1, CAR E2, CAR E3, CAR E4 and CAR E5 raised and closed out.

VPA-2: Refer CAR E1, CAR E2, CAR E3, CAR E4, CAR E5 and CAR E6 raised and closed out.

5.10. Quality Management

Quality Management procedures for measurements, collection and compilation of data, data storage and archiving, calibration, maintenance and training of personnel in the framework of this GS PoA-DD have been defined. The procedures defined can be assessed as appropriate for the purpose. No significant deviations thereof have been observed during the verification.

5.11. Actual emission reductions during the 2nd commitment period as from 1 January 2013 onwards

The MR(s) include(s) actual ER values achieved from 1 January 2013 onwards as follows:

Table 5-2: Emission reductions after 2013-01-01

VPA	Monitoring Period[1)]	ERs
VPA-1	2017-01-01 to 2017-12-31	42,590 tCO_2e
VPA-2	2017-01-02 to 2017-12-31	2,332 tCO_2e

5.12. 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 VPA-DD.

VPA	Ex-Ante ERs	EX Post ERs	Difference
VPA-1	20,874 tCO_2e	42,490 tCO_2e	21,916 tCO_2e
VPA-1	3,406 tCO_2e	2,332 tCO_2e	-1,074 tCO_2e

VPA-1:

The ex-post value is found to be higher than the ex-ante determined value. The reason for the increase as follows:

1. The number of installed units applied in the ex-ante ER calculation was 7,983 as compared to 20,253 units for this monitoring period.
2. Higher substitution of biomass and fossil fuel with increase in biogas usage.
3. The GWP for methane potential applied in the registered VPA-DD was 21 whilst 25 is applied for this monitoring period.

Therefore, the increased in ER for this monitoring period is comprehendible.

The annual emissions for methane avoidance for this monitoring period are approx. 32,129 tCO_2e which is still below the 60,000 tCO_2e threshold for Type III small scale project activities.

The total installed thermal energy generation capacity of the project equipment for this monitoring period is 38.74 MW_{th} which is below the threshold of 45MW_{th} for Type I small scale project activities.

VPA-2:

The ex-post value is found to be lower than the ex-ante determined value. The reason for the decrease as follows:

The number of installed units applied in the ex-ante ER calculation and VPA2-DD is 3,000 as compared to 1,990 units for this monitoring period.

5.13. Contribution to Sustainable Development

The SD indicators as outlined in the sustainability monitoring plan of the GS PoA Passport are monitored and reported appropriately and cross-verified by means of desk review of survey reports, interviews with the CME operation personnel and selected households. The monitoring system and all applied procedures are in compliance to the sustainability monitoring plan in the registered GS VPA-DD and the Gold Standard principles.

Table 5-1: Assessment of monitored SD Indicators

VPA1:

No	Indicator	Chosen Parameter	Situation as at 2017-12-31	Verification Opinion
GS-03	Soil Condition	Number of users applying the final bio-digester slurry on agricultural land.	14,021 households	The usage survey reported 69.23% of the households apply bio-slurry for the farming activities. /BUS/ During the onsite inspection and telephone interviews it could be confirmed that 74% of the households apply bio-slurry for farming activities which substantiates the results of the usage survey. /LHH/ Refer CAR F1 raised
GS-06	Quality of employment	Quality of employment refers to changes compared to the baseline in the qualitative value of employment, such as whether the jobs resulting from the project activity are highly or poorly qualified, temporary or permanent. The proportion of employees attending vocational training programs, as proven through issuance of a certificate to all constructors, will be monitored.	1,377 vocational trainings	The value was based on the records in the database on training conducted for this monitoring period. /VPA1DB/ During the onsite visits, the provincial officers, technicians, supervisors and householders were interviewed to cross-checked on the training conducted. Based on that the value could be confirmed.
GS-07	Livelihood of the poor	Livelihood of the poor refers to changes compared to the baseline in living conditions, access to healthcare services including affordability and poverty alleviation. To indicate improvement, as part of the Biogas User Survey users will be asked whether they have perceived an improvement in their living conditions after the installation of the biodigester	Improved: 16,942 HHs (83.65%) The same: 3,311 HHs (16.35%) Worsened: 0 HHs (0%)	The data is derived from the usage survey report. /BUS/ During the onsite visit, the visited households confirmed the living conditions have improved as follows: 1. The biodigester has reduced the manure smell and disposal of untreated manure. 2. They have free cooking gas and reduce the purchase of LPG. Thus reduced the household expenses. Refer CAR F2 and CAR F3 raised

No	Indicator	Chosen Parameter	Situation as at 2017-12-31	Verification Opinion
GS-08	Access to affordable and clean energy services	Access to energy services refer to changes in unsustainable energy use. This will be monitored through the number of biogas units commissioned.	20,253 biodigesters implemented	The number of biodigesters installed as at 2016-12-31 was derived from the database stored at the Jakarta office. /VPPA1DB/ During the onsite, the database was cross-checked to confirm the actual number of units implemented. Refer CAR F4 raised.
GS-09	Human and institutional capacity	Changes compared to the baseline in education and skills, gender equality and empowerment. Women spend much of their time collecting firewood and cooking, and have little spare time to undertake activities that stimulate personal and entrepreneurial development. The number of women attending the Operation and Maintenance training as well as the bio-slurry utilization training will be monitored.	4,072 women attending O&M training	The number of household women attended the O&M training was recorded in the database. /VPA1DB/ During the onsite inspection, the visited households could confirm O&M training for the biodigester is provided by the provincial technical team regularly. /LHH/IM04/ Refer CAR F5 raised.
GS-10	Quantitative employment and income generation	The number of jobs generated by within the IDBP as well as the number of constructors employed will be monitored. To evidence income generation, the amount of users selling biodigester slurry on the market will be monitored.	1,502 number of direct jobs created by the project 1,168 households 5.77% of total) sell the bio-slurry on the market	The database was reviewed to cross-checked on the number of direct jobs and constructors created by the VPA. /VPA1DB/IM01/IM04 The percentage of households sell bio-slurry was derived from the usage survey. The report was reviewed to cross-checked on the reported percentage of households sell bio-slurry. /BUS/
GS-12	Technology transfer and technological self-reliance	Refers to changes compared to the baseline in activities that build usable and sustainable know-how in a region / country for a technology, where know-how was previously lacking. The number of constructors trained and users attending the operation and maintenance training will be monitored	17,090 O&M training	The training records in the database were reviewed during onsite and could conclude the O&M trainings attended by the households and constructor supervisors. The households and supervisor was interviewed during onsite visit. /LHH/IM04/IM01/ Refer CAR F6 raised.

The verification team can confirm that no changes to the registered SD parameters have occured that may have an impact on Gold Standard qualification of this project activity.

Refer CAR F1, CAR F2, CAR F3, CAR F4, CAR F5 and CAR F6 raised and closed out.

VPA2:

No	Indicator	Chosen Parameter	Situation as at 2017-12-31	Verification Opinion
GS-03	Soil Condition	Number of users applying the final bio-digester slurry on agricultural land.	1,378 households	The usage survey reported 69.23% of the households apply bio-slurry for the farming activities. /BUS/ During the onsite inspection and telephone interviews it could be confirmed that 83% of the households apply bio-slurry for farming activities as compared to the results of the usage survey. /LHH/ Refer CAR F1 raised
GS-06	Quality of employment	Quality of employment refers to changes compared to the baseline in the qualitative value of employment, such as whether the jobs resulting from the project activity are highly or poorly qualified, temporary or permanent. The proportion of employees attending vocational training programs, as proven through issuance of a certificate to all constructors, will be monitored.	51 vocational trainings	The value was based on the records in the database on training conducted for this monitoring period. /VPA2DB/ During the onsite visits, the provincial officers and supervisors were interviewed to cross-checked on the training conducted. Based on that the value could be confirmed. /IM04/ Refer CAR F2 raised
GS-07	Livelihood of the poor	Livelihood of the poor refers to changes compared to the baseline in living conditions, access to healthcare services including affordability and poverty alleviation. To indicate improvement, as part of the Biogas User Survey users will be asked whether they have perceived an improvement in their living conditions after the installation of the biodigester	Improved: 1,665 HHs (83.65%) The same: 325 HHs (16.35%) Worsened: 0 HHs (0%)	The data is derived from the usage survey report. /BUS/ During the onsite visit, the visited households confirmed the living conditions have improved as follows: 1. The biodigester has reduced the manure smell and disposal of untreated manure. 2. They have free cooking gas and reduce the purchase of LPG. Thus reduced the household expenses. Refer CAR F3 raised
GS-08	Access to affordable and clean energy services	Access to energy services refer to changes in unsustainable energy use. This will be monitored through the number of biogas units commissioned.	1,990 biodigesters implemented	The number of biodigesters installed as at 2017-12-31 was derived from the database stored at the Jakarta office. /VAP2DB During the onsite, the database was checked. The data officer and provincial officers were interviewed on the data submitted for the number of units installed. /IM01/ Refer CAR F4 raised
GS-09	Human and institutional capacity	Changes compared to the baseline in education and skills, gender equality and empowerment. Women spend much of their time collecting firewood and cooking, and	708 women attending O&M training	The number of household women attended the O&M training was recorded in the database. /VAP2DB/ During the onsite inspection, the visited households could confirm O&M training for

No	Indicator	Chosen Parameter	Situation as at 2017-12-31	Verification Opinion
		have little spare time to undertake activities that stimulate personal and entrepreneurial development. The number of women attending the Operation and Maintenance training as well as the bio-slurry utilization training will be monitored.		the biodigester is provided by the provincial technical team regularly. /LHH/IM04/IM01/
GS-10	Quantitative employment and income generation	The number of jobs generated by within the IDBP as well as the number of constructors employed will be monitored. To evidence income generation, the amount of users selling biodigester slurry on the market will be monitored.	52 number of direct jobs created by the project 115 households 5.77% of total) sell the bio-slurry on the market	The database was reviewed to cross-checked on the number of direct jobs and constructors created by the VPA. /VPA2DB/ The percentage of households sell bio-slurry was derived from the usage survey. The report was reviewed to cross-checked on the reported percentage of households sell bio-slurry. /BUS/ Refer CAR F5 raised
GS-12	Technology transfer and technological self-reliance	Refers to changes compared to the baseline in activities that build usable and sustainable know-how in a region / country for a technology, where know-how was previously lacking. The number of constructors trained and users attending the operation and maintenance training will be monitored	2,758 O&M training	The training records in the database were reviewed during onsite and could conclude the O&M trainings attended by the households and constructor supervisor. /VPA2DB/ The households and supervisor was interviewed during onsite visit. /IM04/LHH/

The verification team can confirm that no changes to the registered SD parameters have occured that may have an impact on Gold Standard qualification of this project activity.

Refer CAR F1, CAR F2, CAR F3, CAR F4 and CAR F5 raised and closed out

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 installed households which are relevant for the project performance and the monitoring activities.

The verification team has checked on the agreement between the PP and householders for the construction of the biodigester signed between householder (Party A) and PP (Party B) joining the program was verified the include the below statement. /A1/

Party A agreed to give up the right to the use the carbon emission reductions to HIVOS the organiser of IDPB program and use it for the Indonesia Domestic Biogas Programme.

No issues have been identified indicating that the implementation of the project activity and the steps to claim emission reductions are compliant with the GS requirements.

5.15. Grievances

The PoA applies GS version 2.1, therefore there is no requirements on reporting of any grievances raised by local stakeholders.

The verification team has interviewed the operational personnel, reviewed the survey report and there are no complaints and grievances raised by the householders.

The verification team has interviewed the householders during the onsite inspection and there were no complaints as regards to the CME personnel and the constructors.

The households are satisfied having installed a biodigester to have free cooking gas and thus have savings in fuel costs.

5.16. Hints for next periodic Verification

No FAR has been raised during this fourth periodic verification.

6. VERIFICATION AND CERTIFICATION STATEMENT

HIVOS has commissioned the TÜV NORD JI/CDM Certification Program to carry out the VPA-2 periodic verification of the PoA: "**Indonesia Domestic Biogas Programme of Activities (IDBP) (ID 1172)**", with regard to the relevant requirements for GS project activities. The PoA reduces GHG emissions due to displacement of non-renewable cooking fuel with biogas, avoidance of methane emission from animal manure by capturing and destroying methane for thermal energy use and displacement of chemical fertilizers by the bio-slurry. This verification covers the emission reductions achieved by both the VPA-1 and VPA-2 in their corresponding monitoring periods:

VPA No.	*Monitoring period (MP):*	
	From:	*To:*
1	2017-01-02	2017-12-31
2	2017-01-02	2017-12-31

In the course of the verification 19 Corrective Action Requests (CAR) and 1 Clarification (CL)were raised and successfully closed for VPA-1 whilst 19 Corrective Action request (CAR) and 1 clarification (CL) were raised and successfully closed for VPA-2. The verification is based on the draft monitoring report(s), revised monitoring report(s), the monitoring plan as set out in the registered VPA-DD(s), 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.
- 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.
- the project contributes to sustainability development

As the result of the 5th periodic verification for VPA-1 and 1st periodic verification for VPA-2, 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 PoA has achieved emission reductions in the above mentioned reporting period as follows:

Emission reductions:

VPA-1	**42,652 tCO_2e**
VPA-2	**2,332tCO_2e**

Puchong, 2018-10-19

Cheong, Chun Yuen (Robert)
TÜV NORD JI/CDM Certification Program
Verification Team Leader

Essen, 2018-10-19

Winter, Rainer
TÜV NORD JI/CDM Certification Program
Final Approval

7. REFERENCES

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

VPA-1:

Reference	Document
Monitoring Report	
/MRVPA1/	Monitoring Report version 0.1 dated 2018-04-07 Monitoring Report version 0.2 dated 2018-06-20 Monitoring Report version 03 dated 2018-08-27
/MRVPA2/	Monitoring Report version 0.1 dated 2018-04-07 Monitoring Report version 0.2 dated 2018-06-20 Monitoring Report version 0.3 dated 2018-07-06 Monitoring Report version 0.4 dated 2018-08-08 Monitoring Report version 0.5 dated 2018-10-18
ER Spreadsheet	
/ERVPA1/	ER spreadsheet version 0.1 dated 2018-04-07 ER spreadsheet version 0.2 dated 2018-06-20 ER spreadsheet version 0.3 dated 2018-08-27
/ERVA2/	ER spreadsheet version 0.1 dated 2018-04-07 ER spreadsheet version 0.2 dated 2018-06-20 ER spreadsheet version 0.3 dated 2018-07-06 ER spreadsheet version 0.4 dated 2018-10-18
Calibration	
/C1/	Calibration for 500gm and 1,000gm weights conducted by Balai Pengelola Laboratorium Metrologi dated 2016-05-24 Scale calibration form dated 2013-09-23 Calibration method dated 2013-09-23
Database	
/VPA1DB/	IDBP 2017 project database version 1 IDBP 2017 project database version 2
/VPA2DB/	IDBP 2017 project database version 1 IDBP 2017 project database version 2
Leakage	
/L1/	Leakage assessment report dated December 2017 Email for Leakage Assessment confirmation dated 2016-05-18

Reference	Document
Kitchen Performance Test	
/KPT/	KPT December 2017 KPT Biogas and Non-biogas users form
Biogas Usage Survey	
/BUS/	Biogas Usage Survey 2018 BUS Survey 2018 Tabulation
Agreement	
/A1/	Sample agreement with households for year 2017 for VPA-2 Sample agreement (translated)
Technical Design	
/TD1/	Technical Design of digesters undated
QA/QC	
/QA1/	Operation and Maintenance Manual
Others	
/O1/	Biogas as renewable energy theory and development Nepal 2005-07
/O2/	Indonesian National Standard on LGP Stoves
/O3/	Kerosene to LP Gas Conversion Programme in Indonesia
/O4/	Behaviour Analysis of Using the Household Fuel in Bogor. 2010
/O5/	IPCC Chapter 10 on Livestock emissions
/O6/	Memo Perbaikan Reaktor
/O7/	Gold Standard email communication threshold small-scale biogas VPA
/O8/	Monitoring Method for Monitoring Survey; Usage Survey and Leakage assessment with GS undated

Table 7-2: Background investigation and assessment documents

Reference	Document
/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
/GSGWP/	The Application of Global Warming Potentials for Gold Standard Project Activities
/GSIRVPA1/	GS Issuance Review VPA-1 dated 2017-10-25
/GSIRVPA2/	GS validation revised VPA-1 dated 2017-05-04
/GSM/	Technologies and practices to displace decentralized thermal energy consumption, version 1.0 (TPDDTEC)
/GSPPoA/	PoA Gold Standard Passport dated 2013-04-03
/GSPVPA1/	VPA1 Gold Standard Passport dated 2013-04-03
/GSPVPA2/	VPA2 Gold Standard Passport version 1.0 dated 2016-10-14
/GSR/	Gold Standard Requirements version 2.1
/GSS/	Guidelines for Sampling and Surveys for CDM Project Activities and Programme Of Activities, EB 69, Annex 5
/GST/	Gold Standard Toolkit version 2.1
/IPCC/	Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories: 1. Non-CO_2 Stationery Combustion 2. Emissions from Livestock and Manure Management (Chapter 10) 3. IPCC Second Assessment Report – Climate Change 1995: A Report of the Intergovernmental Panel on Climate Change
/KP/	Kyoto Protocol (1997)
/MA/	Decision 3/CMP. 1 (Marrakesh – Accords)
/GSPoADD/	GS Programme of Activities Design Document for GS PoA project: “Indonesia Domestic Biogas Programme of Activities (IDBP) (ID 1172)” version 5.0, dated 2013-10-16
/PS/	CDM Project Standard (Version 01.0)
/SSS/	Standard for Sampling and Surveys for CDM Project Activities and Programme Of Activities, EB 86, Annex 3

Reference	Document
/VAL/	Validation Report for GS project "Indonesia Domestic Biogas Programme of Activities (IDBP) (ID 1172)" version 01.8, dated 2013-12-03 Validation Report for GS project "Indonesia Domestic Biogas Programme of Activities (IDBP) VPA-2 (GS 5303)" version 01.3 dated 2017-07-04
/VER/	Documents of previous verification (Monitoring report, verification report, ER calculation sheet)
/VPA1DD/	Component Project Activity Design Document for GS VPA-DD: Indonesia Domestic Biogas Programme of Activities (IDBP) (ID 1172), VPA-1 (ID 1174), version 7, dated 2013-11-06
/VPA2DD/	Component Project Activity Design Document for GS VPA-DD: Indonesia Domestic Biogas Programme of Activities (IDBP) (ID 1172), VPA-2 (GS 5303), version 1.3, dated 2017-07-03
/VVS/	CDM Validation and Verification Standard (Version 01.0)

Table 7-3: Websites used

Reference	Link	Organisation
/gs/	http://www.goldstandard.org/	CDM Gold Standard
/unfccc/	http://cdm.unfccc.int	UNFCCC
/ipcc/	www.ipcc-nggip.iges.or.jp	IPCC publications
/ss/	http://www.raosoft.com/samplesize.html	Sampling Size

Table 7-4: List of interviewed persons

Reference	MoI[1]		Name	Organisation / Function
/IM01/	V	☒ Mr. ☐ Ms	Agung Lenggono	Biogas Technical Officer / Yayasan Rumah Energi
		☐ Mr. ☒ Ms	Chabi Batur Romzini (Bibah)	Senior Database Officer / Yayasan Rumah Energi
		☒ Mr. ☐ Ms	Satya Budi Utama (Tommy)	Deputy Project Manager / Yayasan Rumah Energi
		☒ Mr. ☐ Ms	Dian Legowo	Database officer / Yayasan Rumah Energi

Reference	MoI[1]		Name	Organisation / Function
		☒ Mr. ☐ Ms	Slamet Basuki	Biogas Quality Inspector / Yayasan Rumah Energi - Solo
		☒ Mr. ☐ Ms	Willem Leang	Provincial Co-ordinator / Yayasan Rumah Energi - Solo
		☒ Mr. ☐ Ms	Banbang	Supervisor / Yayasan Rumah Energi - Solo
/IM02/	T	☒ Mr. ☐ Ms	Szymon Mikolajczyk	Consultant / Climate Focus
/IM03/	V	☐ Mr. ☒ Ms	Rita Maria	Director / JRI Research
/IM04/	V	☒ Mr. ☐ Ms	Supriyanto	Head / Malang CPO
	V	☒ Mr. ☐ Ms	Ngutiman	Head / Semin CPO
	V	☒ Mr. ☐ Ms	Suyuno	Head / Kretek CPO

List of households visited: /LHH/

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Subdistrict, District, Province)
1	V	KJP0030	Misnan	Argosari, Jabung, Malang, Jawa Timur
2	V	KJP0050	Suliono	Argosari, Jabung, Malang, Jawa Timur
3	V	KJP0219	Sugeng Kariyono	Argosari, Jabung, Malang, Jawa Timur
4	V	KJP0245	Munir	Argosari, Jabung, Malang, Jawa Timur
5	V	KJP0417	Resmiati	Argosari, Jabung, Malang, Jawa Timur
6	V	KJP0450	Suwarno	Argosari, Jabung, Malang, Jawa Timur
7	V	KJP0526	Wari	Argosari, Jabung, Malang, Jawa Timur
8	V	KJP0530	Nikmaturohmah	Argosari, Jabung, Malang, Jawa Timur

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Subdistrict, District, Province)
9	V	KJP0543	Mustakim	Argosari, Jabung, Malang, Jawa Timur
10	V	KJP0550	Kajin	Argosari, Jabung, Malang, Jawa Timur
11	V	KJP0634	Tiwar	Argosari, Jabung, Malang, Jawa Timur
12	V	KJP0015	Mursain	Gading Kembar, Jabung, Malang, Jawa Timur
13	V	KJP0021	Kinaryo	Gading Kembar, Jabung, Malang, Jawa Timur
14	V	KJP0121	Dori	Gading Kembar, Jabung, Malang, Jawa Timur
15	V	KJP0281	Suwarno	Gading Kembar, Jabung, Malang, Jawa Timur
16	V	KJP0327	Triwarno	Gading Kembar, Jabung, Malang, Jawa Timur
17	V	KJP0441	Jami'an	Gading Kembar, Jabung, Malang, Jawa Timur
18	V	KJP0291	Sukanto	Sambirejo, Ngantang, Malang, Jawa Timur
19	V	NGP0340	Juli	Gading Kembar, Jabung, Malang, Jawa Timur
20	V	KJP0448	Adi Sucipto	Gading Kembar, Jabung, Malang, Jawa Timur
21	V	NGP0033	Budiadi	Jombok, Ngantang, Malang, Jawa Timur
22	V	NGP0034	Suwito	Jombok, Ngantang, Malang, Jawa Timur
23	V	NGP0035	Kartaji	Jombok, Ngantang, Malang, Jawa Timur
24	V	NGP0036	Meseran	Jombok, Ngantang, Malang, Jawa Timur
25	V	NGP0037	Bai	Jombok, Ngantang, Malang, Jawa Timur
26	V	NGP1053	Suntiaji	Sidodadi, Ngantang, Malang, Jawa Timur
27	V	NGP0039	Juki	Jombok, Ngantang, Malang, Jawa Timur
28	V	NGP0604	Sri Fatinah	Ngembul, Ngantang, Malang, Jawa Timur
29	V	NGP0613	Rahmat Sukamto	Jombok, Ngantang, Malang, Jawa Timur
30	V	NGP0720	Suprianto	Ngembul, Ngantang, Malang, Jawa Timur

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Subdistrict, District, Province)
31	V	NGP0634	Supriyanto	Jombok, Ngantang, Malang, Jawa Timur
32	V	NGP0669	Panji Yakin	Jombok, Ngantang, Malang, Jawa Timur
33	V	NGP0670	Jaseman	Jombok, Ngantang, Malang, Jawa Timur
34	V	NGP1065	Endang Juwariyah	Jombok, Ngantang, Malang, Jawa Timur
35	V	NGP1080	Samsi / Sutini	Jombok, Ngantang, Malang, Jawa Timur
36	V	NGP1141	Ble Katino	Jombok, Ngantang, Malang, Jawa Timur
37	V	NGP1151	Ble Singgih Pamuji	Jombok, Ngantang, Malang, Jawa Timur
38	V	NGP1213	Ble Painu	Jombok, Ngantang, Malang, Jawa Timur
39	V	NGP1223	Ble Da'i/Sutiah	Jombok, Ngantang, Malang, Jawa Timur
40	V	NGP1225	Ble Budiono / Mimik	Jombok, Ngantang, Malang, Jawa Timur
41	V	NGP1233	Ble Tukiman	Jombok, Ngantang, Malang, Jawa Timur
42	V	NGP1333	Ble Sholikan	Jombok, Ngantang, Malang, Jawa Timur
43	V	NGP1334	Ble Srinah / Kholis	Jombok, Ngantang, Malang, Jawa Timur
44	V	NGP1380	Arnam	Jombok, Ngantang, Malang, Jawa Timur
45	V	NGP1450	Sutajianto	Jombok, Ngantang, Malang, Jawa Timur
46	V	NGP0079	Gatot Mulyono	Pandansari, Ngantang, Malang, Jawa Timur
47	V	NGP0146	Darmaji	Pandansari, Ngantang, Malang, Jawa Timur
48	V	NGP1217	Jari	Pandansari, Ngantang, Malang, Jawa Timur
49	V	NGP1405	Jamal	Pandansari, Ngantang, Malang, Jawa Timur
50	V	NGP0305	Supriono	Pandansari, Ngantang, Malang, Jawa Timur
51	V	NGP0576	Suwono / Likah	Pandansari, Ngantang, Malang, Jawa Timur
52	V	NGP1220	Solawat	Pandansari, Ngantang, Malang, Jawa Timur

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Subdistrict, District, Province)
53	V	NGP0697	Nyari	Pandansari, Ngantang, Malang, Jawa Timur
54	V	NGP0699	Mudiono	Pandansari, Ngantang, Malang, Jawa Timur
55	V	NGP0717	M. Jaim / Lilis	Pandansari, Ngantang, Malang, Jawa Timur
56	V	NGP1159	Ble Winarno	Pandansari, Ngantang, Malang, Jawa Timur
57	V	NGP0576	Suwono	Pandansari, Ngantang, Malang, Jawa Timur
58	V	NGP0536	Bai	Pandansari, Ngantang, Malang, Jawa Timur
59	V	NGP1390	Andri	Pandansari, Ngantang, Malang, Jawa Timur
60	V	NGP0522	Madiono	Pandansari, Ngantang, Malang, Jawa Timur
61	V	NGP0579	Taseri	Pandansari, Ngantang, Malang, Jawa Timur
62	V	NGP1392	Ngateman	Pandansari, Ngantang, Malang, Jawa Timur
63	V	NGP0563	Suwandi	Pandansari, Ngantang, Malang, Jawa Timur
64	V	NGP1338	Ble Sugiantoro / Siti Anipah	Pandansari, Ngantang, Malang, Jawa Timur
65	V	NGP1377	Ismanu	Pandansari, Ngantang, Malang, Jawa Timur
66	V	NGP1385	Adona / Adoni	Pandansari, Ngantang, Malang, Jawa Timur
67	V	NGP1411	Suwono	Pandansari, Ngantang, Malang, Jawa Timur
68	V	NGP1414	Jari	Pandansari, Ngantang, Malang, Jawa Timur
69	V	NGP1415	Mustofa / Komariah	Pandansari, Ngantang, Malang, Jawa Timur
70	V	NGP1202	Ble Djina / Panadi	Pandansari, Ngantang, Malang, Jawa Timur
71	V	NGP0453	Senu	Pandansari, Ngantang, Malang, Jawa Timur
72	V	NGP0357	Suwanto	Pandansari, Ngantang, Malang, Jawa Timur

VPA-2:

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Subdistrict, District, Province)
1	V	PBP1199	APBD, Parno Wiyoto	Bendung, Semin, Gunung Kidul, DI Yogyakarta
2	V	PBP1193	APBD, Tarwito	Bendung, Semin, Gunung Kidul, DI Yogyakarta
3	V	PBP1207	APBD, Harda Sardi	Bendung, Semin, Gunung Kidul, DI Yogyakarta
4	V	PBP1208	APBD, Sakimin	Bendung, Semin, Gunung Kidul, DI Yogyakarta
5	V	PBP1210	APBD, Muh Saefudin	Bendung, Semin, Gunung Kidul, DI Yogyakarta
6	V	PBP1223	APBD, Umar	Bendung, Semin, Gunung Kidul, DI Yogyakarta
7	V	PBP1229	APBD, Wibowo	Bendung, Semin, Gunung Kidul, DI Yogyakarta
8	V	PBP1233	APBD, Purwadi	Bendung, Semin, Gunung Kidul, DI Yogyakarta
9	V	PBP1237	APBD, Tugiyo	Bendung, Semin, Gunung Kidul, DI Yogyakarta
10	V	PBP1239	APBD, Paimin	Bendung, Semin, Gunung Kidul, DI Yogyakarta
11	V	PBP1246	APBD, Jumari	Bendung, Semin, Gunung Kidul, DI Yogyakarta
12	V	PBP1484	APBD, Sarma	Bendung, Semin, Gunung Kidul, DI Yogyakarta
13	V	PBP1495	APBD, Andy Kusnadi	Bendung, Semin, Gunung Kidul, DI Yogyakarta
14	V	PBP1498	APBD, Yasri Handoko	Bendung, Semin, Gunung Kidul, DI Yogyakarta
15	V	PBP1526	APBD, Paidi	Bendung, Semin, Gunung Kidul, DI Yogyakarta
16	V	PBP1531	APBD Sukar, Hadi	Bendung, Semin, Gunung Kidul, DI Yogyakarta
17	V	PBP1534	APBD, Misdi	Bendung, Semin, Gunung Kidul, DI Yogyakarta
18	V	PBP1221	APBD, Saryanto	Bendung, Semin, Gunung Kidul, DI Yogyakarta
19	V	PBP1243	APBD, Hadi Suyono	Bendung, Semin, Gunung Kidul, DI Yogyakarta
20	V	PBP1225	APBD Surnami	Bendung, Semin, Gunung Kidul, DI Yogyakarta

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Subdistrict, District, Province)
21	V	BPP0095	Samsudi Raharjo / Sandi	Tirtomulyo, Kretek, Bantul, D.I. Yogyakarta
22	V	BPP0096	Supardal	Tirtomulyo, Kretek, Bantul, D.I. Yogyakarta
23	V	BPP0099	Sukamta	Tirtomulyo, Kretek, Bantul, D.I. Yogyakarta
24	V	BPP0105	Sagino	Tirtomulyo, Kretek, Bantul, D.I. Yogyakarta
25	V	BPP0118	Palyadi	Tirtomulyo, Kretek, Bantul, D.I. Yogyakarta
26	V	BPP0106	Sukamto	Tirtomulyo, Kretek, Bantul, D.I. Yogyakarta
27	V	BPP0152	Kiva Tugitem	Tirtomulyo, Kretek, Bantul, D.I. Yogyakarta
28	V	BPP0173	Suradi, Suradi	Tirtomulyo, Kretek, Bantul, D.I. Yogyakarta
29	V	BPP0191	Saryanto, Saryanto	Tirtomulyo, Kretek, Bantul, D.I. Yogyakarta
30	V	BPP0108	Saritanto .SN	Sidomulyo, Bambang Lipuro, Bantul, D.I. Yogyakarta

List of households interviewed by telephone calls:/LHH/

VPA-1:

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Sub-District, District, Province)
1	T	ADP0285	Ni Nyoman Sundari	Krobokan, Sawan, Buleleng, Bali
2	T	BEP0003	Ble Muhammad Solikhan	Wonolelo, Pleret, Bantul, D.I. Yogyakarta
3	T	BEP0004	Ble Sungkono	Wonolelo, Pleret, Bantul, D.I. Yogyakarta
4	T	BEP0015	Ble Zuhdi Syakuri	Wonolelo, Pleret, Bantul, D.I. Yogyakarta
5	T	BEP0016	Ble Wan Tohohir	Wonolelo, Pleret, Bantul, D.I. Yogyakarta
6	T	BEP0025	Ble Pranto Wiharjo	Umbul Harjo, Cangkringan, Sleman, D.I. Yogyakarta
7	T	BEP0036	Ble Petrus Sokidi	Purwo Binangun, Pakem, Sleman, D.I. Yogyakarta

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Sub-District, District, Province)
8	T	BEP0095	Ble Sabar K	Kepuharjo, Cangkringan, Sleman, D.I. Yogyakarta
9	T	BEP0104	Ble Kliwon	Srimulyo, Piyungan, Bantul, D.I. Yogyakarta
10	T	BEP0110	Ble Samijo	Kepuharjo, Cangkringan, Sleman, D.I. Yogyakarta
11	T	BEP0135	Rokinem/Indro Sutrisno	Sumberadi, Mlati, Sleman, D.I. Yogyakarta
12	T	BOP0017	Ketut Sunarka	Selat, Payangan, Gianyar, Bali
13	T	BPP0024	Abdul Jabbar Suhardi	Muntuk, Dlingo, Bantul, D.I. Yogyakarta
14	T	PBP0169	Esdm Suharjono	Srimartani, Piyungan, Bantul, D.I. Yogyakarta
15	T	PBP0263	Dak Suparno	Ngeposari, Semanu, Gunung Kidul, D.I. Yogyakarta
16	T	PBP0290	Dak Sumanto	Karang Asem, Ponjong, Gunung Kidul, D.I. Yogyakarta
17	T	PBP0297	Dak Agung Gunawan	Kepek, Wonosari, Gunung Kidul, D.I. Yogyakarta
18	T	PBP0316	Dak Widodo (Ganjar Widodo)	Ngalang, Gedang Sari, Gunung Kidul, D.I. Yogyakarta
19	T	PBP0409	Dak Siswo Suwarno	Candirejo, Semin, Gunung Kidul, D.I. Yogyakarta
20	T	PBP0449	Dak Purwanto	Kalitekuk, Semin, Gunung Kidul, D.I. Yogyakarta
21	T	PBP0564	Apbd Daliyo	Caturharjo, Pandak, Bantul, D.I. Yogyakarta
22	T	PBP0886	Apbd Kusnan	Sidorejo, Lendah, Kulon Progo, D.I. Yogyakarta
23	T	SHP0021	Tugiyo	Srihardono, Pundong, Bantul, D.I. Yogyakarta
24	T	SUP0011	Ble Suryatno	Banjarasri, Kalibawang, Kulon Progo, D.I. Yogyakarta

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Sub-District, District, Province)
25	T	SUP0043	Ble Susana Supiyo	Sendangsari, Pajangan, Bantu, D.I. Yogyakarta
26	T	SUP0050	Ble Slamet	Gilangharjo, Pandak, Bantul, D.I. Yogyakarta
27	T	SUP0066	Suwarti	Sabdodadi, Bantul, Bantul, D.I. Yogyakarta
28	T	EPP0111	Ble Utep Rusmana	Pasirhalang, Cisarua, Bandung, Jawa Barat
29	T	JPP0015	Sobur	Cibodas, Pacet, Cianjur, Jawa Barat
30	T	KIP0001	Junen	Cipari, Cigugu, Kuningan, Jawa Barat
31	T	KIP0011	A.Aman	Cisantana, Cigugur, Kuningan, Jawa Barat
32	T	KIP0031	Arifin	Pasir Halang, Cisarua, Bandung, Jawa Barat
33	T	KIP0049	Apbd Nanang	Situ Udik, Cibungbulang, Bogor, Jawa Barat
34	T	KIP0050	Apbd H.Acep	Pamijahan, Pamijahan, Bogor, Jawa Barat
35	T	SIP0001	Dindin	Margamulya, Pangalengan, Bandung, Jawa Barat
36	T	STP0008	Daing	Raharja, Tanjungsari, Sumedang, Jawa Barat
37	T	TJP0440	Dak Supratman	Lebakmuncang, Ciwidey, Bandung, Jawa Barat
38	T	TJP0456	Apbd Suhara	Cicadas, Sagalaherang , Subang, Jawa Barat
39	T	TJP0464	Wiratno	Sukaresmi, Sukaresmi, Cianjur, Jawa Barat
40	T	TJP0466	Parman	Tanjungjaya, Banjarwangi, Garut, Jawa Barat
41	T	TJP0467	Nia Kurnia	Mekarjaya, Cikajang, Garut, Jawa Barat
42	T	ATP0005	Kiva Khoirul Anam	Sumurpule, Kragan, Rembang, Jawa Tengah
43	T	BYP0043	Ble Purwanto	Krasak, Teras, Boyolali, Jawa Tengah
44	T	BYP0044	Ble Panut Isnanto	Krasak, Teras, Boyolali, Jawa Tengah
45	T	BYP0062	Ble Janar	Pancur, Pancur , Rembang, Jawa Tengah
46	T	BYP0084	H. Suama	Dorokandang, Lasem, Rembang, Jawa Tengah

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Sub-District, District, Province)
47	T	HPP0001	Samijan	Sempu, Andong, Boyolali, Jawa Tengah
48	T	HPP0006	Saman, S.Ag	Temuwangi, Pedan, Klaten, Jawa Tengah
49	T	HPP0035	Ponimin	Tulas, Karangdowo, Klaten, Jawa Tengah
50	T	HPP0036	Suwarno	Cabean, Kunti, Cepogo, Boyolali, Jawa Tengah
51	T	HPP0039	Sahudi	Canden, Sambi, Boyolali, Jawa Tengah
52	T	LPP0001	Kaharyanto	Mojosongo, Mojosongo, Boyolali, Jawa Tengah
53	T	LPP0005	Ibrahim	Mojosongo, Mojosongo, Boyolali, Jawa Tengah
54	T	LPP0007	Tri Haryanto	Mojosongo, Mojosongo, Boyolali, Jawa Tengah
55	T	LPP0008	Suyono	Mojosongo, Mojosongo, Boyolali, Jawa Tengah
56	T	LUP0016	Gimin Cattamono	Blingoh, Donorojo, Pati, Jawa Tengah
57	T	ONP0040	Demplot Pertamina Suwarno	Kembang, Jatipurno, Wonogiri, Jawa Tengah
58	T	ONP0100	Ble Muchammad Muchorabin	Pakintelan, Gunung Pati, Semarang, Jawa Tengah
59	T	ONP0110	Flipmas Taryanto	Ketundan, Pakis, Magelang, Jawa Tengah
60	T	ONP0111	Flipmas Alip	Ketundan, Pakis, Magelang, Jawa Tengah
61	T	PBP0318	Esdm Widji	Turusgede, Rembang, Rembang, Jawa Tengah
62	T	QTP0026	Sudarno	Jetak, Getasan, Semarang, Jawa Tengah
63	T	QTP0031	Ngadiyono	Jetak, Getasan, Semarang, Jawa Tengah
64	T	QTP0036	Sumadi	Sempu, Andong, Semarang, Jawa Tengah
65	T	QTP0068	Supiyanto	Jetak, Getasan, Semarang, Jawa Tengah
66	T	QTP0086	Yusmin	Jetak, Getasan, Semarang, Jawa Tengah
67	T	QTP0097	Tugiwal	Jetak, Getasan, Semarang, Jawa Tengah

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Sub-District, District, Province)
68	T	QTP0098	Wagimin	Lerep, Ungaran, Semarang, Jawa Tengah
69	T	QTP0123	Sugimin	Jetak, Getasan, Semarang, Jawa Tengah
70	T	QTP0296	Widayanto	Campuranom, Bansari, Temanggung, Jawa Tengah
71	T	QTP0308	Undip Muhammad Muslih	Klumpit, Gebog, Kudus, Jawa Tengah
72	T	QTP0318	Zumri	Noborejo, Argomulyo, Salatiga, Jawa Tengah
73	T	QTP0322	Haryanto	Karanganyar, Purwodadi, Grobogan, Jawa Tengah
74	T	QTP0323	Slamet Efendi	Noborejo, Argomulyo, Salatiga, Jawa Tengah
75	T	QTP0324	Nurhadi	Noborejo, Argomulyo, Salatiga, Jawa Tengah
76	T	QTP0326	Agung Witono	Gondosari, Gebog, Kudus, Jawa Tengah
77	T	RMP0114	Ble Supangat	Trengguli, Jenawi, Karanganyar, Jawa Tengah
78	T	RMP0133	Kiva Tri Pudyastono	Trengguli, Jenawi, Karanganyar, Jawa Tengah
79	T	RMP0151	Tarwo	Dukuh, Ngargoyoso, Karanganyar, Jawa Tengah
80	T	SAP0081	Gunretno	Baturejo, Sukolilo, Pati, Jawa Tengah
81	T	SUP0067	Ani Hidayah	Kalinggoro, Mertoyudan, Magelang, Jawa Tengah
82	T	SUP0076	Surat	Ngandong, Gantiwarno, Klaten, Jawa Tengah
83	T	SUP0079	Agus Santoso	Kebon Agung, Bandongan, Magelang, Jawa Tengah
84	T	TKP0122	Tribowo	Rogomulyo, Kaliwungu, Semarang, Jawa Tengah
85	T	TKP0123	Sidiq Widoyo	Rogomulyo, Kaliwungu, Semarang, Jawa Tengah

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Sub-District, District, Province)
86	T	TKP0129	Narto	Rogomulyo, Kaliwungu, Semarang, Jawa Tengah
87	T	TKP0131	Suparsi	Rogomulyo, Kaliwungu, Semarang, Jawa Tengah
88	T	TKP0135	Tugimin	Rogomulyo, Kaliwungu, Semarang, Jawa Tengah
89	T	KJP0060	Cari	Busu, Jabung, Malang, Jawa Timur
90	T	KJP0080	Fatkhurozi	Pakis Kembar, Pakis, Malang, Jawa Timur
91	T	KPP0005	Yasin Bukori	Dalisodo, Wagir, Malang, Jawa Timur
92	T	KPP0015	Hariyono	Sumber Urip, Ngancar, Kediri, Jawa Timur
93	T	KPP0022	Sutomo	Dalisodo, Wagir, Malang, Jawa Timur
94	T	NGP0088	Darsono	Waturejo, Ngantang, Malang, Jawa Timur
95	T	SPP0015	Rohman	Pujon Lor, Pujon, Malang, Jawa Timur
96	T	SSP0015	Muntohin	Aryojeding, Rejotangan, Tulungagung, Jawa Timur
97	T	TMP0005	A Nurcholis	Kandangtepus, Senduro, Lumajang, Jawa Timur
98	T	FJP0026	Blh Ridwan	Sri Rejo Sari, Way Jepara, Lampung Timur, Lampung
99	T	FJP0049	Purwantoro	Rejomulyo, Metro Selatan, Kota Metro, Lampung
100	T	FJP0054	Supanut/Siti Nuntana	Mojopahit, Punggur, Lampung Tengah, Lampung
101	T	FJP0062	Csr Robain	Batu Badak, Marga Sekampung, Lampung Timur, Lampung
102	T	HBP0003	Mustakim/Ibu Uwlan	Banjaragung, Sekampungudik, Lampung Timur, Lampung
103	T	HBP0034	Supardi	Siraman, Pekalongan, Lampung Timur, Lampung

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Sub-District, District, Province)
104	T	HBP0056	Zaenal Arifin	Raman Fajar, Raman Utara, Lampung Timur, Lampung
105	T	HBP0066	Hkti Supiyan	Sido Asri, Labuhan Ratu Ix, Lampung Timur, Lampung
106	T	HBP0087	Pln Nyoman Arnawa	Restu Rahayu, Raman Utara, Lampung Timur, Lampung
107	T	HBP0115	Sukadi	Kalipasir, Way Bungur, Lampung Timur, Lampung
108	T	NUP0007	Kiva Nadam	Sinar Negeri, Pubian, Lampung Tengah, Lampung
109	T	YLP0076	Unila Supriyanto	Pesawaran Indah, Padang Cermin, Pesawaran, Lampung
110	T	YLP0079	Sugiyanto	Sumber Alam, Air Hitam, Lampung Barat, Lampung
111	T	YLP0084	Sisyono	Sinar Harapan, Rajabasa, Bandar Lampung, Lampung
112	T	YLP0086	Blh Ibu Surati/Sudirman	Taman Sari, Gedong Tataan, Pesawaran, Lampung
113	T	YLP0087	Blh Mujio Slamet	Taman Sari, Gedong Tataan, Pesawaran, Lampung
114	T	YLP0088	Unila Sukisno	Kediri, Gadingrejo, Pringsewu, Lampung
115	T	YMP0010	Abdullah	Bagik Payung, Suralaga, Lombok Timur, Nusa Tenggara Barat
116	T	ALP0106	Alex Meha	Wairasa, U Ratu Nggai Barat, Sumba Tengah, Nusa Tenggara Timur
117	T	ALP0123	Mbepa Karanja Mbani	Prailiu, Kambera, Sumba Timur, Nusa Tenggara Timur
118	T	ALP0125	Veronika Beka Mayorga	Kambajawa, Kota Waingapu, Sumba Timur, Nusa Tenggara Timur
119	T	FRP0001	Markus Umbu Tonga	Umbu Mamijuk, Umbu Ratu Nggay Barat, Sumba Tengah, Nusa Tenggara Timur

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Sub-District, District, Province)
120	T	FRP0007	Yance Landukara	Sabawawi, Loli, Sumba Barat, Nusa Tenggara Timur
121	T	HSP0001	Bulu Koba	Ramadana, Loura, Sumba Barat Daya, Nusa Tenggara Timur
122	T	HSP0003	Menase Lende Louro	Tagabba, Wejewa Timur, Sumba Barat Daya, Nusa Tenggara Timur
123	T	HSP0035	Yesaya Rangga Waijewa	Pero Batang, Kodi, Sumba Barat Daya, Nusa Tenggara Timur
124	T	HSP0039	Dominggus Bora	Padaeweta, Kota Waikabubak, Sumba Barat, Nusa Tenggara Timur
125	T	HSP0075	Lelu Umbu Sogara	Kalembu Tilu, Wewewa Barat, Sumba Barat Daya, Nusa Tenggara Timur
126	T	HSP0106	(V) Yulius Ngongo Kaka	Weerena, Tambolaka, Sumba Barat Daya, Nusa Tenggara Timur
127	T	HSP0109	Samuel Gollu	Kindara, Wewewa Tengah, Sumba Barat Daya, Nusa Tenggara Timur
128	T	HSP0110	M.Lende,S.Pd	Langgalero, Kota, Sumba Barat Daya, Nusa Tenggara Timur
129	T	HSP0117	Bernardus Ngongonaru	Pogotena, Loura, Sumba Barat Daya, Nusa Tenggara Timur
130	T	KKP0004	Agus Umbu Hina	Kamanggih, Kahaungu Eti, Sumba Timur, Nusa Tenggara Timur
131	T	KKP0026	Markus Ridolf Djami	Wanga, Umalulu, Sumba Timur, Nusa Tenggara Timur
132	T	KKP0029	Yohanis Ngongo Pingge	Temu, Kanatang, Sumba Timur, Nusa Tenggara Timur
133	T	KKP0067	Albertus Lili Kondamara	Humba Hamu, Wanga, Sumba Timur, Nusa Tenggara Timur
134	T	KKP0122	Puri Kunji	Laruru, Melolo, Sumba Timur, Nusa Tenggara Timur

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Sub-District, District, Province)
135	T	KKP0125	Pdt. Rusta Maji	Temu, Haharu, Sumba Timur, Nusa Tenggara Timur
136	T	KKP0148	H.K.Djurumana S.St	Ri Wundut, Lewa, Sumba Timur, Nusa Tenggara Timur
137	T	LWP0035	David Dairo Lede	Kalembu Kaha, Kodi Utara, Sumba Barat Daya, Nusa Tenggara Timur
138	T	BJP0025	Dak Baco	Papanloe, Pajukukang, Bantaeng, Sulawesi Selatan
139	T	BJP0222	Apbd Sala	Kassi, Rumbia, Jeneponto, Sulawesi Selatan
140	T	BSP0159	Bleb Anto	Lompo Tengah, Tanete Riaja, Barru, Sulawesi Selatan
141	T	BTP0171	H Abd Haris/H Haris Dg Tinri	Bontokadatto, Polut, Takalar, Sulawesi Selatan
142	T	BTP0373	Apbd Sujarto	Muktisari, Bone-Bone, Luwu, Utara Sulawesi Selatan
143	T	BTP0383	Apbd Harimollah	Salakan, Pattallassang, Takalar, Sulawesi Selatan
144	T	MGP0035	Bleb Najib	Siawung, Barru, Barru, Sulawesi Selatan
145	T	BTP0423	Apbd Hilmuddin	Bonepute, Burau, Luwu Timur, Sulawesi Selatan
146	T	BTP0461	H. Julbi, S.Pd	Malewang, Polut, Takalar, Sulawesi Selatan
147	T	FZP0004	Apbd Ilham	Sipatuo , Patampanua, Pinrang, Sulawesi Selatan
148	T	FZP0003	Apbd Kamarudin	Lompoe, Bacukiki, Pare-Pare, Sulawesi Selatan
149	T	KUP0174	Apbd Syamsuddin S.	Harapan, Bonto Sikuyu, Kep Selayar, Sulawesi Selatan
150	T	MDP0140	Apbn Habing	Tellu Limpoe, Tellu Limpoe, Sinja, Sulawesi Selatan
151	T	NIP0005	Bles Monjong	Parigi, Takkalalla, Wajo, Sulawesi Selatan

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Sub-District, District, Province)
152	T	NIP0144	Dak Hadi	Walanga, Penrang, Wajo, Sulawesi Selatan
153	T	PHP0005	Dak Simon Bate	Tagari, Tallunglipu, Toraja, Utara Sulawesi Selatan
154	T	PHP0007	Dak Paulus Lobo	Bungin, Makale Utara, Tana Toraja, Sulawesi Selatan
155	T	PHP0022	Dak (V) Suratman	Tulungsari, Sukamaju, Luwu, Utara Sulawesi Selatan
156	T	PHP0032	Dak (V) Karel Kassa	Murante, Mungkajang, Palopo, Sulawesi Selatan
157	T	BTP0355	Apbd Enseh Puji	Muktisari, Bone-Bone, Luwu, Utara Sulawesi Selatan
158	T	RNP0029	Apbd H.Hasanuddin / Hj.Arfina	Langnga, Mattirosompe, Pinrang, Sulawesi Selatan
159	T	SCP0030	Dak Abdul Latif	Raya, Turikale, Maros, Sulawesi Selatan
160	T	BOP0084	Wayan Budiarsa	Buuahan Kaja, Payangan, Gianyar, Bali
161	T	BOP0001	I Made Suarjana	Kertha. Payangan, Gianyar, Bali
162	T	IDP0240	Wayan Sutama	Jehem, Tembuku,,Bangli, Bali

VPA-2:

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Sub-District, District, Province)
1	T	QTP0330	Harsono	Bawu, Kemusu, Boyolali, Jawa Tengah
2	T	QTP0331	Undip Rustono	Montongsari, Weleri, Kendal, Jawa Tengah
3	T	LPP0435	Kartini	Lumbungkerep, Wonosari, Klaten, Jawa Tengah
4	T	BPP0117	Sudarto	Sedayu, Loano, Purworejo, Jawa Tengah
5	T	HPP0041	Suyono Purwo Sudarmo	Mliwis, Cepogo, Boyolali, Jawa Tengah

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Sub-District, District, Province)
6	T	HPP0043	Ahmadi	Lerep, Ungaran, Semarang, Jawa Tengah
7	T	HPP0044	Suminah	Simo, Simo, Boyolali, Jawa Tengah
8	T	HPP0045	Winarno	Temuwangi, Pedan, Klaten, Jawa Tengah
9	T	KTP0196	Muksin Susanto	Kalipucang, Tutur, Kab. Pasuruan, Jawa Timur
10	T	FJP0055	Apbd Martini	Ngesti Rahayu, Punggur, Lampung Tengah, Lampung
11	T	HBP0185	Taufikurahman	Sidorejo, Sekampung Udik, Lampung Timur, Lampung
12	T	HBP0191	Poniman	Rajabasa Lama, Labuhan Ratu, Lampung Timur, Lampung
13	T	KIP0015	H.Sarkam	Salareuma, Cipicung, Kuningan, Jawa Barat
14	T	KIP0061	Ita Bin Sahdi	Palacari, Ciater, Subang, Jawa Barat
15	T	KIP0064	Agus C.Hidayat	Cikahuripan, Lembang, Bandung Barat, Jawa Barat
16	T	KIP0072	Pjt Ii Wahyudin/Ai	Margamukti, Pengalengan, Bandung, Jawa Barat
17	T	HBP0195	Sudirman	Taman Endah, Purbulinggo, Lampung Timur, Lampung
18	T	YLP0100	Add Poniti	Sukaraja Tiga, Marga Tiga, Lampung Timur, Lampung
19	T	HSP0122	Samuel Lede Bulu	Tamorara, Wewewa Barat, Sumba Barat Daya, Nusa Tenggara Timur
20	T	HSP0125	Yohanes Loba Geli	Karuni, Loura, Sumba Barat Daya, Nusa Tenggara Timur
21	T	HSP0168	Petrus Chrissologus S.Settu	Weelonda, Kota Tambolaka, Sumba Barat Daya, Nusa Tenggara Timur

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Sub-District, District, Province)
22	T	HSP0181	Valentinus Dhoi	Radamata, Kota, Sumba Barat Daya, Nusa Tenggara Timur
23	T	KKP0162	Katauhi Kabumang	Umalulu, Umalulu, Sumba Timur, Nusa Tenggara Timur
24	T	KKP0163	Nicolaus Stu Tanur	Wangga, Kambera, Sumba Timur, Nusa Tenggara Timur
25	T	TJP0394	H.Syarif-Puji	Cipendawa, Pacet, Cianjur, Jawa Barat
26	T	TJP0399	Ahmad Khaerudin	Mekar Jaya, Cikajang, Garut, Jawa Barat
27	T	KKP0174	Drh.Oktavianus Samuel U.Br	Matawai, Kota Waingapu, Sumba Timur, Nusa Tenggara Timur
28	T	KKP0182	Yohanes Ngongo Pawa	Kambajawa, Waingapu, Sumba Timur, Nusa Tenggara Timur
29	T	LWP0185	Apbd Isak Bili Malingara	Dede Kadu, Loli, Sumba Barat, Nusa Tenggara Timur
30	T	LWP0247	Devind Y.Djami, St	Rua, Wanukaka, Sumba Barat, Nusa Tenggara Timur
31	T	LWP0248	Semuel Baga	Kabukarubi, Lamboya, Sumba Barat, Nusa Tenggara Timur
32	T	LWP0294	Petrus Mete	Wainyapu, Kodi Balagar, Sumba Barat Daya, Nusa Tenggara Timur
33	T	LWP0354	Petrus Lede Dappa	Weewella, Kodi Utara, Sumba Barat Daya, Nusa Tenggara Timur
34	T	ROP0002	Lucy Riwong	Kambata Wundut, Lewa, Sumba Timur, Nusa Tenggara Timur
35	T	FZP0030	Apbd N(H)Ursani	Lompoe, Bacukiki, Pare-Pare, Sulawesi Selatan
36	T	FZP0050	Apbd (V) Lakaming	Lemoe, Bacukiki, Pare-Pare, Sulawesi Selatan

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Sub-District, District, Province)
37	T	MDP0224	Apbd Mappiasse	Kalobba, Tellu Limpoe, Sinjai, Sulawesi Selatan
38	T	MDP0225	Apbd Jamal	Samaturue, Tellu Limpoe, Sinjai, Sulawesi Selatan
39	T	MHP0004	Dak (V) Sutarno	Margolembo, Mangkutana, Luwu Timur, Sulawesi Selatan
40	T	MHP0008	Dak (V) Musdi/Misdih	Margolembo, Mangkutana, Luwu Timur, Sulawesi Selatan
41	T	MHP0024	Dak Suhardi	Sinduagung, Mangkutana, Luwu Timur, Sulawesi Selatan
42	T	NIP0167	Esdm Syarifuddin	Rajamawellang, Bola, Wajo, Sulawesi Selatan
43	T	PHP0011	Dak Marlin	Bungin, Makale Utara, Tana Toraja, Sulawesi Selatan
44	T	PHP0040	Sadar	Sumarambu, Telluwanua, Palopo, Sulawesi Selatan
45	T	PHP0054	Priono	Tulung Sari, Sukamaju, Luwu Utara, Sulawesi Selatan
46	T	REP0315	Apbd Sudirman	Alehanoae, Sinjai Utara, Sinjai, Sulawesi Selatan
47	T	YLP0106	Primara, Yulida	Lampung Timur, Lampung
48	T	HBP0205	Yamidi	Rantau Fajar, Raman Utara, Lampung Timur, LAMPUNG
49	T	FJP0053	Sukoyo	Poncokresno, Negri Katon, Pesawaran, Lampung
50	T	NUP0084	Trimin	Rejo Asri, Seputih Raman, Lampung Tengah, Lampung
51	T	NUP0092	Marsudi Bagio Utomo	Cempaka Putih, Bandar Surabaya, Lampung Tengah, Lampung

No.	MoI[1]	Biodigester Number	Household Name	Location (Village, Sub-District, District, Province)
52	T	HBP0183	Sudirman	Taman Endah, Purbolinggo, Lampung Timur, Lampung
53	T	KIP0069	Sulaeman/Ade Suryana	Margamukti, Pengalengan, Bandung, Jawa Barat
54	T	TJP0482	Sulaiman	Sukanagalih, Pacet, Cianjur, Jawa Barat
55	T	TJP0481	Yayan	Cipendana, Pacet, Cianjur, Jawa Barat
56	T	TJP0483	Dede	Ciwalen, Sukaresmi, Cianjur, Jawa Barat
57	T	KIP0083	Depi	Margamukti, Pengalengan, Bandung, Jawa Barat
58	T	KIP0077	Ayat	Margamukti, Pengalengan, Bandung, Jawa Barat
59	T	TJP0486	Ima	Sukaresmi, Sukaresmi, Cianjur, Jawa Barat
60	T	SUP0087	Fatchurohman	Kalegen, Bandongan, Magelang, Jawa Tengah
61	T	TJP0484	Solehudin	Cibodas, Pacet, Cianjur, Jawa Barat

[1)] Means of Interview: (**T**elephone, **E**-Mail, **V**isit)

ANNEX

A1: Verification Protocol

A2: Statements of Competence of involved Personnel

ANNEX 1: 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 *Forward Action Requests*)
Raw data generation				
• Installation of measuring equipment • Dysfunction of installed equipment • Mal-operation 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 inspect-ions of installed equip-ment • Only skilled and trained personnel operate the relevant equipment • Daily raw data checks • Immediate exchange of dysfunctional equipment • Stand-by duty is organized	• 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	• 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 GS 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 *Forward Action Requests*)
• Accuracy of values supplied by Third Parties	• Training • Internal audit procedures • Internal check of QA/QC measures of involved Third Parties	• Inappropriate QA/QC measures of Third Parties	• Application of GS 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 GS Management system procedures	• 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 *Forward Action Requests*)
	• Usage of standard software solutions (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 VPA-DD and monitoring plan	• Unintended or intended Modification of calculation parameters • Wrong application of values • Misinterpretations of the applied methodology and/ or the VPA-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 VPA-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 *Forward Action Requests*)
• Applied formulae • Miscalculation • Mistakes in spread-sheet calculation	• Advanced calculation and reporting tools • A carbon consultant is in charge of the 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-trough. • 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 consultant is responsible for monitoring reporting. • GS 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)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
A. Description of the PoA and its component project activity (-ies)				
A.1. Purpose and general description of the PoA and VPA(s) *Check if section of the MR includes the following:* - *Purpose of the PoA and each VPA and the measures taken to reduce GHG emissions* - *Brief description of the installed technology and equipment* - *Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods etc.)* - *Total emission reductions achieved in this monitoring period*	/MRVPA 1/ /MRVPA 2/ /GSPoA DD/ /VPA1DD / /VPA2DD /	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 VPA(s) and the measures taken to reduce GHG emissions ☐ Brief description of the installed technology and equipment ☐ Relevant dates for the VPAs (e.g. construction, commissioning, continued operation periods, VPA inclusion, etc) ☐ Emission reductions achieved in this monitoring period by each VPA and total emission reductions achieved by the PoA In this context the below finding has been identified: VPA-1: Refer CAR B1 raised VPA-2: Refer CAR B1, CAR B2 and CAR B3 raised	~~CAR B1~~ ~~CAR B2~~ ~~CAR B3~~	OK OK OK
A.2. Location of project activity *Check if section of the MR reflects correctly the following:* - *Host Party(ies)* - *Region / State / Province etc.*	/MRVPA 1/ /MRVPA 2/ /VPA1DD /	The verification team has checked section A.2 of the MR and confirms by means of comparison with the information given in the VPA-DD and information gathered during the site visit that the information provided is complete and correct with regards to the following: ☒ Host Party(ies) ☒ Region / State / Province	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
- *City / Town / Community etc.* - *Physical / geographical location (e.g. Latitude and Longitude)*	/VPA2DD/ /IM01/ /IM03/	☒ City / Town / Community ☒ Physical / Geographical location In this context no findings have been identified:		
A.3. Parties and Project Participants *Check if section of the MR includes the following:* - *All PPs as displayed on the UNFCCC website* - *A correctly filled table as per the MR template*	/MR/ /GS/	The verification team has checked section A.3 of the MR as well as the GS website and confirms that: ☒ all PPs as displayed on the project related GS website are correctly listed ☒ the table as per the template MR has been correctly filled In this context no findings have been identified:	OK	OK
A.4. Reference of applied methodology *Check if section 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 GS/EB decisions, if applicable*	/MRVPA1 /MRVPA2// /VPA1DD/ /VPA2DD/ /GS/	The verification team has checked section 1.1 of the MR and confirms by means of comparison with the information given in the VPA-DD and displayed on the GS website that the information provided is complete and correct with regards to the following: ☒ Number, title and version of the applicable GS Methodology ☒ Relevant GS decisions In this context no findings have been identified:	OK	OK
A.5. Crediting period of project activity *Check if section of the MR correctly includes the following:*	/MRVPA1/ /MRVPA2/	The verification team has checked section 1.1 of the MR(s) and confirms by means of comparison with the information displayed on the GS website that the information provided is complete and correct with regards to the following:	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
- *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 GS.* - *Length and type of the crediting period*	/GS/ /GSIR/	☒ Start date of the crediting period. ☒ Type and length of the crediting period In this context no findings have been identified:		
A.6. Publication of the Work Plan *Check if the work plan has been made submitted to GS before the verification commenced.*	/GS/	The verification team has ensured and confirms by means of checking the respective project information on the GS website that: ☒ The work and audit plan, was submitted to GS prior to the start of the verification activities. ☒ No comments have been received. In this context no findings have been identified:	OK	OK
B. Implementation of project activity				
B.1. Description of implemented registered programme of activities *Check if section of the MR correctly describes / includes the following:* - *Implementation status of the PoA and its VPAs* - *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 VPAs are considered in two separate batches*	/MRVPA 1/ /MRVPA 2/ /GSPoA DD/ /VPA1DD / VPA2DD/ /IM01/	The verification team has checked section 1 of the MR and confirms by means of comparison with the information given in the PoA-DD and VPA-DD, the project standard and information gathered during the site visit that: ☒ the description of the implementation status of the VPA is in line with the applicable provisions of the Gold 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 VPAs, OR	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
		☒ two different MRs are prepared including all VPAs and information on the reference numbers of the VPAs that are included in each batch. In this context no findings have been identified:		
B.1.1. Initial project implementation *Assess whether the VPA has been implemented and operated as per the registered VPA-DD and are all physical features of the project in place.* *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 – the necessity of PRC notifications / approvals.*	/MRVPA 1/ /MRVPA 2/ /VPA1DD / /VPA2DD /	The verification team has checked the implemented project activity and the MR and confirms by means of comparison with the information given in the VAP-DD, the applicable Gold Standard Requirements, Toolkit and information gathered during the site visit that: ☒ the project has been implemented and operated as per the registered VAP-DD and the GS Passport and all physical features of the project are in place ☒ the project has been implemented phase wise and corresponding evidence has been provided ☒ the project is still in compliance with the applied methodology In this context no findings have been identified:	OK	OK
B.1.2. Technical equipment changes *Check if relevant technical equipment of the project activity has been exchanged or modified during the monitoring period. Further ensure that consistent notations of key equipment (meters etc.) in MR and calculation spreadsheet are applied* *Consider e.g. interviews with operational personnel, QMS records, maintenance records, instrument specifications.*	/MRVPA 1/ /MRVPA 2/ /VPA1DD / /VPA2DD /	The verification team has checked the implemented project activity and the MR and confirms by means of comparison with the information given in the VPA-DD, the applicable GS Requirements and Toolkit and information gathered during the site visit and interviews that: ☒ no technical equipment has been exchanged or modified during the monitoring period ☒ the notations of key equipment are consistently applied in the project documentation	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
In case of changes, check whether the project is still in line with the registered VPA-DD and assure that these changes have been considered in the monitoring report and the emission reduction calculation. *In case of post registration changes pl. refer to chapter B.2.*		In this context no findings have been identified:		
B.1.3. Operation of the project activity *Check if relevant operation modes of the project activity have been exchanged or modified during the monitoring period.* *Consider e.g. interviews with operational personnel, operation log sheets, data management system records.* *In case of changes, check whether the project is still in line with the registered VPA-DD and assure that these changes have been considered in the monitoring report and the emission reduction calculation.* *In case of post registration changes pl. refer to chapter B.2.*	/MRVPA 1/ /MRVPA 2/ /VPA1DD / /VPA2DD /	The verification team has checked the implemented project activity and the MR and confirms by means of comparison with the information given in the VPA-DD, the applicable Gold Standard Requirements and Toolkit and information gathered during the site visit and interviews that: ☒ no relevant operation modes of the project activity have been exchanged or modified during the monitoring period ☐ the following changes have been adopted during the monitoring period, however the project is still in line with the registered VPA-DD:	OK	OK
B.1.4. Incidents *Identify if there have been any significant incidents, deviant operation modes and / or downtimes of the equipment?* *Consider e.g. interviews with operational personnel, operational log sheets, analysis of performance data.*	/MRVPA 1/ /MRVPA 2/	The verification team has checked the implemented project activity and the MR and confirms by means of comparison with the information given in the VPA-DD, the applicable Gold Standard Requirements and Toolkit and information gathered during the site visit and interviews that:	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
		☒ no significant incidents, deviant operation modes and / or downtimes of the equipment happened during the monitoring period ☐ the following incidents, deviant operation modes and / or downtimes of the equipment happened during the monitoring period		
B.1.5. Legislation Find out – esp. in the context of methodological requirements - whether relevant legislation with effect on the project activity in the host country has been changed. Assess, in case of changes, whether consequences for the PA with regard to relevant CDM requirements have been accounted for. In case of changes data sources shall be referenced.	/MRVPA 1/ /MRVPA 2/	The verification team has checked the host country legislation and confirms by means of comparison with the implemented project that: ☒ No relevant legislation with effect on the project activity in the host country has been changed In this context no findings have been identified.	OK	OK
B.1.6. Open issues from validation *Check (esp. in case of 1st periodic verification) whether there are any open issues indicated in the validation report (e.g. FAR)?*	/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 *Check in case of further periodic verifications whether there are any open issues indicated in previous*	/MR/ /VER/ /GSIR/	☒ There were no open issues addressed in the previous verification report ☐ All open issues from the previous verification have been appropriately addressed.	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
verification reports (FAR) and take into consideration the guidance as specified in VVS.		☐ The following issues related to the previous verification have not yet been appropriately addressed:		
B.2. Post registration changes				
B.2.1. Post registration changes applicable to the proposed project activity *Indicate whether any post registration change already approved or under approval by the GS has been identified.*	/MRVPA 1/ /MRVPA 2 /VPA1DD / /VPA2DD /	☒ 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 VAP-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; TDfMM) *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*	/MRVPA 1/ /MRVPA 2/ /VPA1DD / /VPA2//	☒ No TDfrMP or TDfMM have been submitted to the GS prior to the current monitoring period ☐ The following TDfrMP or TDfMM have been approved or are under approval by the GS 1 Title: ; Status: ☐ under approval; ☐ approved; Appr.date: ; Ref. No.: ; 2 Title:	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
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.*		☐ Status: ☐ under approval; ☐ approved Appr.date: Ref.No. ☒ During the verification of the current MP no need for a TDfrMP or TDfMM has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA ☐ An approval of the following TDfrMP or TDfMM is to be requested from the GS for the current MP as appendix 1 of the project standard does not apply. 1 Issue: 2 Issue: ☐ The following TDfrMP or TDfMM for which appendix 1 of the PS is applicable have been applied: 1 Issue: 2 Issue: In this context no findings have been identified:		
B.2.3. Corrections *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.*	/MRVPA 1/ /MRVPA 2	☒ During the verification of the current MP no need for corrections has been identified. ☐ The following corrections have been applied:	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
In cases where the correction(s) and the revised VPA-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 VPA-DD. *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.*	/VPA1DD/ /VPA2DD/	<table><tr><td></td><td>1</td><td>Issue:</td><td></td></tr><tr><td></td><td>2</td><td>Issue:</td><td></td></tr></table> In this context no findings have been identified:		
B.2.4. Permanent changes from the registered monitoring plan or applied methodology (PCfrMP; PCfMM) *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.* *Assure that modifications or additions of technologies/measures respect to the VPA-DD were already included in the originally registered PoA-DD.* *In cases where the change(s) and the revised VPA-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 VPA-DD.*	/MRVPA1/ /MRVPA2 /VPA1DD/ /VPA2DD/	<table><tr><td>☒</td><td colspan="3">No PCfrMP or PCfMM.have been submitted to the GS prior to the current monitoring period</td></tr><tr><td>☐</td><td colspan="3">The following PCfrMP or PCfMM have been approved or are under approval by the GS</td></tr><tr><td></td><td>1</td><td>Title</td><td></td></tr><tr><td></td><td></td><td>Status</td><td>☐ under approval; ☐ approved</td></tr><tr><td></td><td></td><td>Appr.date</td><td></td></tr><tr><td></td><td></td><td>Ref. No.</td><td></td></tr><tr><td></td><td>2</td><td>Title</td><td></td></tr><tr><td></td><td></td><td>Status</td><td>☐ under approval; ☐ approved</td></tr><tr><td></td><td></td><td>Appr.date</td><td></td></tr><tr><td></td><td></td><td>Ref.No.</td><td></td></tr></table>	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
		☒ 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 GS 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 of the PS is applicable have been applied: 1 Issue: 2 Issue: In this context no findings have been identified:		
B.2.5. Changes to the project design of the registered PoA / VPA (CoPD) *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.* *Assure that modifications or additions of technologies/measures respect to the VPA-DD were already included in the originally registered PoA-DD*	/MRVPA 1/ /MRVPA 2 /VPA1DD / /VPA2DD /	☒ No CoPD has been submitted to the GS prior to the current monitoring period ☐ The following CoPD has been approved or are under approval by the GS 1 Title Status ☐ under approval; ☐ approved Appr.date	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
In cases where the change(s) and the revised VPA-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 VPA-DD.		<table><tr><td></td><td></td><td>Ref. No.</td><td></td></tr><tr><td></td><td>2</td><td>Title</td><td></td></tr><tr><td></td><td></td><td>Status</td><td>☐ under approval; ☐ approved</td></tr><tr><td></td><td></td><td>Appr.date</td><td></td></tr><tr><td></td><td></td><td>Ref.No.</td><td></td></tr><tr><td>☒</td><td colspan="3">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><tr><td>☐</td><td colspan="3">An approval of the following CoPD.is to be requested from the GS for the current MP as appendix 1 of the project standard does not apply.</td></tr><tr><td></td><td>1</td><td>Issue:</td><td></td></tr><tr><td></td><td>2</td><td>Issue:</td><td></td></tr><tr><td>☐</td><td colspan="3">The following CoPD for which appendix 1 of the PS is applicable have been applied:</td></tr><tr><td></td><td>1</td><td>Issue:</td><td></td></tr><tr><td></td><td>2</td><td>Issue:</td><td></td></tr></table> In this context no findings have been identified:		
C. Description of monitoring system				

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
C.1. Monitoring Plan – VPA-DD Compliance *Check if the monitoring plan is in accordance with the monitoring plan contained in the registered VPA-DD (or any accepted revised MP).* *Please check esp. If:* - *all parameters stated in the MP of the registered VPA-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*	/MRVPA 1/ /MRVPA 2/ /VPA1DD / /VPA2DD / /BUS/	By means of comparison of the MR with the registered VPA-DD (or any revisions thereof) the verification team has checked whether the MP is in compliance with the registered VPA-DD. The outcome is as follows: ☒ The MP is completely in accordance with the last registered version of the VPA-DD / MP. In this context no findings have been identified:	OK	OK
C.2. Monitoring Plan – Meth Compliance *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.* *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 VPAs.*	/MRVPA 1//MRVPA2/ /VPA1DD / /VPA2DD / /GSM/	By means of comparison of the MR with the applied GS 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 GS project (last registered version of the VPA-DD) ☐ The MP is completely in accordance with the applied tools which the methodology references. A breakdown of the referenced tools is as follows:	OK	OK

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>1</td><td>Title (of the tool)</td><td></td></tr><tr><td></td><td></td><td>Version</td><td></td></tr><tr><td></td><td></td><td>MP compliance</td><td>☐ full compliance ☐ findings have been raised ☒ N/A (for MP)</td></tr><tr><td></td><td>2</td><td>Title (of the tool)</td><td></td></tr><tr><td></td><td></td><td>Version</td><td></td></tr><tr><td></td><td></td><td>MP compliance</td><td>☐ full compliance ☐ findings have been raised ☒ N/A (for MP)</td></tr><tr><td></td><td>3</td><td>Title (of the tool)</td><td></td></tr><tr><td></td><td></td><td>Version</td><td></td></tr><tr><td></td><td></td><td>MP compliance</td><td>☐ full compliance ☐ findings have been raised ☒ N/A (for MP)</td></tr></table>In this context no findings have been identified:		
C.3. Management System *Check if the GHG data monitoring system can be assessed as appropriate.*	/MR/ /VPA1DB/	*Description:* An independent consultant has been hired to conduct the monitoring of carbon parameters and GS sustainability indicators for the national biodigesters programme.	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
In case reference is made to a (certified) company quality management system, check if all GS related monitoring procedures have been fully integrated in the project participant's quality management system. *In case of a stand-alone system, check how the GHG management system has been implemented and effectiveness is ensured.*	/VPA2DB/ /BUS/ /KPT/ /L1/	The project activity has a project database managed at Hivos Indonesia central office in Jakarta, Indonesia. The organization chart for the monitoring activities includes Hivos Indonesia operational personnel and carbon consultants who manage the database and conduct field surveys for usage, CMS and KPT. *Verifier´s action:* The project database, survey reports and forms have been reviewed by the verification team. *Conclusion:* The management system was set up as a stand-alone system and exclusively for the Hivos. The system has been implemented effectively.		
C.4. Roles and Responsibilities *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?* *If so, have appropriate training measures been carried out.* *In case of changes, assure that the implemented monitoring procedures have not been affected.*	/MRVPA1/ /MRVPA2/ /GSP/ /VPA1DB/ /VPA2DB/ /BUS/	*Description:* The project activity has a project database managed at the Hivos central office in Jakarta. The organization chart for the monitoring activities includes Hivos operational personnel and carbon consultants who manage the database and conduct field surveys for usage, CMS and KPT. *Verifier´s action:* The project database, survey report and forms have been reviewed by the verification team. *Conclusion:*	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
		The survey report and forms have been checked and used without any change so far up to the end of the current monitoring period.		
C.5. Emergency procedures for the monitor-ing system *Check, as appropriate, whether relevant emergency procedures for the monitoring system have been included in the MR and assess whether these procedures have been implemented, when required*	/MRVAP 1/ /MRVPA 2/ /QA1/ /IM01/ /IM02/	*Description:* The computer server in the office has the primary back-up data stored and an external back-up at external media which will be used in the event of an emergency. *Verifier´s action:* During the on-site visit, the verification team has checked the server to confirm the primary data and records stored are the most recent for the MRI. The stored data are password protected and only authorized person could access. The database officer was interviewed to confirm how the data is applied in emergency case. *Conclusion:* By means of onsite assessment and checking the stored data, it can be concluded emergency respond plan is in place.	OK	OK
C.6. Data archive and data protection 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.	/MRVPA 1/ /MRVPA 2/ /VPA1DD/	*Description:* Chapter 6 of the monitoring report also described how the data is archived and backed up. *Verifier´s action:* The data was kept in a project database at Hivos Indonesia central office in Jakarta. The data was backed up periodically onto hard disk media.	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
	/VPA2DD/ /IM01/ /IM02/	During the on-site visit, the verification team has conducted interview and reviewed the records archiving method and procedures for the monitored parameters stated in MR and VPA-DD. Two persons were authorized to access the database key-in interface and only the administrator is authorized to edit the saved database. Furthermore, the data stored at the server is password protected and only authorized personnel can access. *Conclusion:* By means of onsite assessment and checking the stored data, it can be concluded data archiving and protection is in place and has been properly implemented.		
D. Data and parameters				
D.1. Data and Parameters fixed ex ante				
a) Compliance with registered VPA-DD *Check whether the value applied is in compliance with the registered VPA-DD.*	/MRVPA1/ /MRVPA2/ /GSPoADD/ /VPA1DD/ /VPA2DD/	By means of comparison of the MR with the registered PDD (or any revisions thereof) the verification team confirms that: ☒ all ex ante data and parameters are in compliance with the registered PoA-PDD, VPA-DD and the applied methodology or any other tool. In this context no findings have been identified:	OK	OK

Checklist Item (incl. guidance for the verification team)		Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
b) Compliance with the applied methodology *Check whether the value applied is in compliance with the applied methodology or any other tool.*		/MRVPA 1/ /MRVPA 2/ /GSM/	By means of comparison of the MR with the methodology the verification team confirms that: ☒ all ex post and parameters are in compliance with the applied methodology and any other tool. In this context no finding has been identified:	OK	OK
D.2. Data and Parameters monitored					
D.2.1. $U_{p1,y}$	**VPA-1: GS1174** **VPA-2: GS5303**		**Cumulative usage rate for technologies in project scenario p1 in year y, based on cumulative adoption rate and drop off rate (fraction)**		
a) Measurement / Determination method (VVS, §§ 363-367) *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 PDD and the applied methodology.*		/MRVPA 1/ /MRVPA 2/ /ERVPA1 / /ERBPA2 / /VPA1DB / /VPA2DB / /BUS/	*Description:* The cumulative usage rate of bio-digesters for the monitoring period was 85.96% for VPA-1 and 100% for VPA-2. For VPA-2 100% is applied since the start date of the VPA crediting is 2017-01-02. Therefore, there is no drop-off as at 2017-12-31. The data was consolidated from the biogas usage survey results, conducted by an independent consultant. The data is applied to calculate the emission reductions per unit per month. *Verifier´s action:* The data was cross-checked against the survey report records to confirm that the data is consistent. The data applied in the ER spreadsheet was reviewed	~~CAR B1~~ ~~CAR D1~~	OK OK

Checklist Item (incl. guidance for the verification team)		Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		/VPA1DD/ /VPA2DD/	*Conclusion:* The parameter is monitored in accordance with the registered VPA-DD and applied methodology. Refer CAR B1 and CAR D1 raised for both VPAs.		
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 368-374) *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.* *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 Appendix 6.*		/MRVPA1/ /MRVPA2/ /VPA1DD/ /VPA2DD /VPA1DB/ /VPA2DB/ /BUS/ /QA1/ /IM01/ /IM02/	*Description:* The data was based on the survey results and no equipment involved in monitoring. As per the initial assessment the monitored value is deemed to be inconsistent. *Verifier´s action:* The data applied in ER spreadsheets were cross-checked with the usage survey report / forms records and found to be incorrectly The quality control procedure was reviewed and operation personnel interviewed *Conclusion:* The parameter is determined based on the survey results and monitored in accordance with the registered VPA-DDs. Refer CAR B1 and CAR D1 raised for both VPAs.	~~CAR B1~~ ~~CAR D1~~	OK OK
D.2.2. $N_{p1,y}$	**VPA-1: GS1174** **VPA-2: GS5303**		**Cumulative project operational rate included in the project database for project scenario p1 against baseline scenario b1 in year y**		

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
a) Measurement / Determination method (VVS, §§ 363-367) *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 PDD and the applied methodology.*	/MRVPA 1/ /MRVPA 2/ /ERVPA1 / /ERVPA2 / /VPA1DB / VPA2DB/ /BUS/ /O6/ /O7/ /IM01/ /IM02/	*Description:* The number of bio-digesters in operation during the monitoring period. It is calculated using monitoring parameters $N_{op1,y}$ and $O_{p1,y}$: VPA-1: $N_{p1,y} = U_{p1,y} * No_{p1,y} * (O_{p1,y}/365)$, therefore 85.96% * 20,253 * (364.70/365) = = no. of digesters in operation. VPA-2 : $N_{p1,y} = U_{p1,y} * No_{p1,y} * (O_{p1,y}/365)$, therefore 100% * 1990 * (363.98/365) = = no. of igesters in operation. *Verifier´s action:* The database was reviewed to cross–checked on the number of units in operation during the monitoring period. The number of days for non-operation per year $O_{p1,y}$ was checked which is 15 days per year stipulated in the operation memo dated 01/05/2014. The calculated number of days bio-digesters ($O_{p1,y}$) in operation for the monitoring period was reviewed and could be confirmed as correct. VPA-1: Step 1: Calculate the number of days of the total installed digesters in operation.	~~CAR D2~~	OK OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
		365 days: (395 households digesters are out of operation multiplied with 15 days of non-operation divided by the total installed units) = 364.71 days. Step 2: Calculate the number of digesters in operation Total number of digesters installed multiplied by number of days total installed digesters in operation (364.71) divided by number of days in one year 365 = no. of digesters in operation for the monitoring period. VPA-2: Step 1: Calculate the number of days of the total installed digesters in operation. 365 days: (3 households digesters are out of operation multiplied with 15 days of non-operation divided by the total installed units) = 363.98 days. Step 2: Calculate the number of digesters in operation Total number of digesters installed multiplied by number of days total installed digesters in operation (363.98) divided by number of days in one year 365 = no. of digesters in operation for the monitoring period. The number of digesters in operation in this monitoring period for VPA-1 were 17,383 and VPA-2 were 1,984. The operation personnel were interviewed on the number of days each digester will not be in operation per year.		

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
		Conclusion: The parameter is monitored in according to the registered VPA-DD and applied methodology. Refer CAR D2 raised for VPA-2		
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 368-374) *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.* *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 Appendix 6.*	/MRVPA 1/ /MRVPA 2/ /ERVAP1 / /ERVPA2 / /VPA1DB / /VPA2DB / /O6/ /QA1/	*Description:* There is no instrument to measure this parameter. The data is calculated using actual number of units installed and number of days per year a bio-digester not in operation The value is calculated using data from the database and survey results. *Verifier´s action:* The data applied in the equation to determine the value is reviewed and cross checked with the input values and are consistent. The calculation and data applied were reviewed for correctness. Operation personnel were interviewed for the correctness of the calculation QA procedures implemented Conclusion: There is inconsistency in the calculation. Refer CAR D2 raised for VPA-2	~~CAR D2~~	OK

Checklist Item (incl. guidance for the verification team)		**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
D.2.3. $No_{p1,y}$	**VPA-1: GS1174** **VPA-2: GS5303**		**Cumulative number of project technologies included in the project database for project scenario p in year y**		
a) Measurement / Determination method (VVS, §§ 363-367) *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 PDD and the applied methodology.*		/MRVPA 1/ /MRVPA 2/ /ERVAP1 / /ERVPA2 / /VAP1DB / /VAP2DB / /IM01/ /IM02/ /IM04/	*Description:* The number of units installed as at 31/12/2016 for VPA-1 is 20,253 and 1,990 for VPA-2. The data is derived from the installation reports submitted by the provincial offices to Jakarta office. *Verifier´s action:* The project database was reviewed and cross-checked with the selected household inspected during onsite to confirm the data in the database are correct. The provincial personnel were interviewed on the installation reports submission to Jakarta office. The data applied in ER spreadsheet was cross-checked with the database. *Conclusion:* The parameter is monitored in accordance to the registered VPA-DD and applied methodology. Refer CAR B1 and CAR D3 raised for both VPAs.	~~CAR B1~~ ~~CAR D3~~	OK OK
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 368-374) *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*		/MRVPA 1/ /MRVPA 2/	*Description:* The parameter is not measured and based on the input data from the provincial office for the number of units installed each month. The value is calculated using data from the database and survey results.	~~CAR B1~~ ~~CAR D3~~	OK OK

Checklist Item (incl. guidance for the verification team)		Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs. *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 Appendix 6.*		/ERVAP1/ /ERVPA2/ /VAP1DB/ /VAP2DB/ /IM01/ /IM02/ /IM04/ /QA1/	*Verifier´s action:* The data applied in the ER spreadsheet was verified with database for consistency and correctness. Operation personnel were interviewed for the input data to the database. QA procedures implemented *Conclusion:* The reported value is inconsistent with the database. Refer CAR B1 and CAR D3 raised for both VPAs		
D.2.4. $O_{p1,y}$	**VPA-1: GS1174** **VPA-2: GS5303**		**The average technology-days during which the biodigesters are operational for project scenario p1 against baseline scenario b1 in year y**		
a) Measurement / Determination method (VVS, §§ 363-367) *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*		/MRVAP1/ /MRVPA2/ /GSM/ /BUS/	*Description:* The data is calculated using the number of days with the expected number of household digesters not in operation. Based on the operation memo dated 2014-05-01, when a report from the householder is received, the provincial technician must visit the household with 15 days to inspect the cause of non-operation. Should there is a delay in the reporting for more than 15 days, the digester will be considered as out of operation.	~~CAR D3~~	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
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 PDD and the applied methodology.	/VAP1DB/ /VPA2DB/ /ERVPA1/ /ERVPA2/ /O6/ /VPA1DD/ VPA2DD/	During this monitoring period, there were 395 households from VPA-1 and 3 households from VPA-2 reported digesters were out of operation. For this monitoring period, the calculated number of days for the total number of installed digesters in operation is 364.70 days for VPA-1 and 363.98 for VPA-2.		
		Verifier´s action: The memo was reviewed that states the 15 days grace period and after which the digester is considered as non-operation. The survey report was reviewed to cross-checked on the number of households digesters non-operation are 395 for VPA-1 and 2 for VPA-2 was replicated and considered correct. The ER spreadsheet was reviewed to cross-checked on the operation days applied.		
		Conclusion: The parameter is monitored according to the registered VPA-DD and applied methodology. Refer CAR D3 raised for VPA-1		
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 368-374) *In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance*	/MRVPA1/ /MRVPA2/	*Description:* The data is calculated and not measured by any instrument. The value is calculated using data from the database and survey results.	~~CAR D3~~	OK

Checklist Item (incl. guidance for the verification team)		Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
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. *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 Appendix 6.*		/ERVPA1/ /ERVPA2/ /QA1/ /BUS/ /VAP1DB/ /VPADB2/ /IM01/ /IM02/ /VPA1DD/ /VPA2DD/	*Verifier´s action:* During the onsite, the operational personnel and project advisor were interviewed on the approach the data is calculated. The survey report, survey and project database were reviewed to cross-checked on the data applied to determine the average number of operational days per year. The calculation and data applied were reviewed for correctness. Operation personnel were interviewed for the correctness of the calculation. Operation manual is implemented *Conclusion:* The data is determined in accordance to registered VPA-DD. Refer to CAR D3 raised for VPA-1		
D.2.5. $LE_{p1,y}$	**VPA-1: GS1174** **VPA-2: GS5303**		**Leakage in project scenario p during year y**		
a) Measurement / Determination method (VVS, §§ 363-367) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original*		/MRVPA1/ /MRVPA2/	*Description:* According to the registered VPA-DDs, the parameter will be monitored once every two years using survey methods to meet the requirements of the applied methodology.	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
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 PDD and the applied methodology.*	/L1/ /ERVAP1/ ERVPA2/ /VPA1DD/ /VPA2DD /GSM/	A survey was conducted from in December 2017 by the 3rd party consultant to obtain the leakage for usage of firewood. 131 households were surveyed from the nine provinces. *Verifier´s action:* The survey report was reviewed that indicates a leakage of 4.58%. The reported value in the MR and ER spreadsheet was cross-checked for consistency applied in the leakage calculation *Conclusion:* The parameter is monitored according to the registered VPA-DDs and applied methodology.		
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 368-374) *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.* *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the*	/MRVPA1/ MRVPA2/ /L1/ /VPA1DD/ /VPA2DD/	*Description:* The parameter is monitored by means of survey once every 2 years. A survey was conducted in December 2017 by the 3rd party consultant to obtain the leakage for usage of firewood. The parameter is monitored by means of survey once every 2 years *Verifier´s action:* The survey report was reviewed that indicates a leakage of 4.58% for usage of firewood.	OK	OK

Checklist Item (incl. guidance for the verification team)		Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
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 Appendix 6.*		/GSM/	*Conclusion:* The parameter is monitored in accordance to registered VPA-DDs and applied methodology		
D.2.6. $N_{T,h}$	**VPA-1: GS1174** **VAP-2: GS5303**		**Number of animals of livestock category T in premise h**		
a) Measurement / Determination method (VVS, §§ 363-367) *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 PDD and the applied methodology.*		/MRVPA 1/ /MRVPA 2/ /VPA1DB / /VPA2DB / /BUS/ /VPA1DD / VPA2DD/ /GSM/ /ERVPA1 / /ERVPA2 /	*Description:* The data for the number of animals for each category is derived from the biogas usage survey report. For this monitoring period, the average number of animals per household as below: Dairy cow: 4.59; Market Swine: 0. *Verifier´s action:* The data applied in the ER spreadsheet was cross-checked with the data from the survey report and primary BUS spreadsheet *Conclusion:* The parameter is monitored in accordance with the registered VPA-DD and applied methodology. Refer CAR D2 for VPA-1 and CAR D5 for VPA-2	~~CAR D2~~ ~~CAR D5~~	OK OK

Checklist Item (incl. guidance for the verification team)		**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 368-374) *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.* *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 Appendix 6.*		/MRVPA1/ /ERVPA2/ /BUS/ /VAP1DB/ VPA2DB/ /ERVPA1/ /ERVPA2/ /QA1/ /IM01/ /IM02.	*Description:* The parameter is based on survey results and not measured by any instruments. The data is derived from survey conducted *Verifier´s action:* The survey data was reviewed and cross-checked with the data applied in the ER spreadsheets for correctness Operational manual implemented. *Conclusion:* The data is the MR is inconsistent with the survey results. Refer CAR D2 for VPA-1 and CAR D5 for VPA-2	~~CAR D2~~ ~~CAR D5~~	OK OK
D.2.7. PL	**VPA-1: GS1174** **VPA-2: GS5303**		**Physical leakage of the biodigester**		
a) Measurement / Determination method (VVS, §§ 363-367) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original*		/MRVPA1/	*Description:* A default value of the 10% is applied for this parameter The value is derived from the registered VPA-DD section B.6.1.	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
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 PDD and the applied methodology.*	/MRVPA2/ /ERVAP1/ /ERVPA2/ /VPADD1/ /VPA2DD/ /GSM/	*Verifier´s action:* Review MR against registered VPA-DD and data applied in ER spreadsheet. *Conclusion:* The parameter is monitored in accordance with the registered VPA-DD and applied methodology.		
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 368-374) *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.* *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.*	/MRVPA1/ /MRVPA2/ /ERVPA1/ /ERVPA2/ /VPA1DD/	*Description:* A default value is applied for this parameter and no measurement is conducted by any instruments. The data for this parameter is a default value from the registered VPA-DD. *Verifier´s action:* The data applied in ER spreadsheet was cross-checked with the registered VPA-DD and applied methodology. T he value stated in MR and ER spreadsheet was reviewed for correctness. Operational manual implemented	OK	OK

Checklist Item (incl. guidance for the verification team)		**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6.		/VPA2DD/ /GSM/ /QA1/	*Conclusion:* The value applied is a default value derived from registered VPA-DD.		
D.2.8. $BB_{b1,bio}$	**VPA-1: GS1174** **VPA-2: GS5303**		**Amount of woody biomass used in the baseline scenario 1: households**		
a) Measurement / Determination method (VVS, §§ 363-367) *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 PDD and the applied methodology.*		/MRVPA1/ /MRVPA2 /ERVPA1/ /ERVPA2/ /BUS/ /KPT/ /VPA1DD/ /VPA2DD/ /GSM/ /LHH/	*Description:* The amount of woody biomass used by the households in the baseline scenario is based on the KPT conducted once in every 2 years. The last KPT test was conducted between 2017-12-14 to 2017-12-24 and applicable for this monitoring period. The woody biomass is firewood in the baseline scenario. *Verifier´s action:* The data in the ER was cross-checked with the results from the KPT primary data and analysis for consistency. During the onsite inspection, it could be confirmed firewood is the woody biomass used prior to the bio-digester is installed. *Conclusion:* The parameter is monitored in accordance with the registered VPA-DD and applied methodology	OK	OK

Checklist Item (incl. guidance for the verification team)		Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 368-374) *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.* *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 Appendix 6.*		/MRVPA1/ /MRVPA2/ /ERVPA1/ /ERVPA2/ /BUS/ /QA1/ /GSM/ /VPA1DD/ /VPA2DD/ /IM01/ /IM02/	*Description:* The parameter is monitored by means of KPT conducted once every 2 years. *Verifier´s action:* The KPT report was reviewed for consistency with the data applied in ER spreadsheet for correctness. Operational manual implemented and operational personnel interviewed. *Conclusion:* The parameter is monitored in accordance to registered VPA-DD and applied methodology.	OK	OK
D.2.9. $BB_{b1,fuel}$	**VPA-1: GS1174** **VPA-2: GS5303**		**Amount of fossil fuels used in the baseline scenario 1: households**		

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
a) Measurement / Determination method (VVS, §§ 363-367) *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 PDD and the applied methodology.*	/MRVPA1/ /MRVPA2/ /ERVPA1/ /ERVPA2/ /BUS/ /VPA1DD/ /VPA2DD/ /GSM/ /KPT/	*Description:* The amount of fossil fuel used by the households in the baseline scenario is based on the KPT conducted once in every 2 years. The last KPT was conducted between 2017-12-14 to 2017-12-24 and applicable for this monitoring period. The fossil fuel used in the baseline scenario is LPG. *Verifier´s action:* The data in the ER was cross-checked with the results from the KPT primary data and analysis for consistency. During the onsite inspection, it was found the household does not used LPG since they have sufficient biogas for cooking *Conclusion:* The parameter is monitored in accordance with the registered VPA-DD and applied methodology	OK	OK
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 368-374) *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.*	/MRVPA1/ /MRVPA2/ /ERVPA1/ /ERVPA2/	*Description:* The parameter is monitored by means of KPT once every 2 years. The data for this parameter is derived from the KPT conducted once every 2 years *Verifier´s action:* The KPT report was reviewed for consistency with the data applied in ER spreadsheet for correctness.	OK	OK

Checklist Item (incl. guidance for the verification team)		**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
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 Appendix 6.*		/BUS/ /QA1/ /KPT/ /GSM/ /VPA1DD/ /VPA2DD/ /IM01/ /IM02/	Operational manual implemented and operational personnel interviewed. *Conclusion:* The parameter is monitored in accordance to registered VPA-DD and applied methodology.		
D.2.10. $BB_{p1,fuel}$	**VPA-1: GS1174** **VPA-2: GS5303**		**Quantity of fossil fuel consumed in project scenario 1 during year y, in tonnes**		
a) Measurement / Determination method (VVS, §§ 363-367) *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.*		/MRVPA1/ /MRVPA2/ /ERVPA1/ /ERVPA2/ /BUS/	*Description:* The quantity of fossil fuel used by the households in the project scenario is based on the KPT conducted once in every 2 years. The last KPT test was conducted between 2017-12-14 to2017-12-24 and applicable for this monitoring period. The fossil fuel in the project scenario is LPG. *Verifier´s action:* The data in the ER was cross-checked with the results from the KPT primary data and analysis for consistency.	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/VPA1DD/ /VPA2DD/ /GSM/ /LHH/	During the onsite inspection, it was found LPG is no longer used by the households for cooking *Conclusion:* The parameter is monitored in accordance with the registered VPA-DD and applied methodology.		
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 368-374) *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.* *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 Appendix 6.*	/MRVPA1/ /MRVPA2/ /ERVPA1/ /ERVPA2/ /BUS/ /QA1/ /VPA1DD/ /VPA2DD/ /GSM/	*Description:* The parameter is monitored by means of KPT conducted once every 2 years. *Verifier´s action:* The KPT report was reviewed for consistency with the data applied in ER spreadsheet for correctness Operational manual implemented and operational personnel interviewed. *Conclusion:* The parameter is monitored in accordance to registered VPA-DD and applied methodology.	OK	OK

Checklist Item (incl. guidance for the verification team)		Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		/IM01/ /IM02/			
D.2.11. $BB_{p1,bio}$	**VPA-1: GS1174** **VPA-2: GS5303**		**Quantity of biomass consumed in project scenario p during year y, in tonnes**		
a) Measurement / Determination method (VVS, §§ 363-367) *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 PDD and the applied methodology.*		/MRVPA1/ /MRVPA2/ /ERVPA1/ /ERVPA2/ /BUS/ /VPA1DD/ /VPA2DD/ /KPT/ /GSM/	*Description:* The quantity of biomass used by the households in the project scenario is measured by means of KPT conducted once in every 2 years. The last KPT test was conducted between 2017-12-14 to 2017-12-24 and applicable for this monitoring period. The biomass consumed in the project scenario is firewood. *Verifier´s action:* The data in the ER was cross-checked with the results from the KPT primary data and analysis for consistency. During the onsite inspection, it could be confirmed firewood is used by households to boil water for business and cooking during festive period or celebration. *Conclusion:* The parameter is monitored in accordance with the registered VPA-DD and applied methodology.	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 368-374) *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.* *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 Appendix 6.*	/MRVPA 1/ /MRVPA 2 /ERVPA1 / /ERVPA2 / /BUS/ /QA1/ /KPT/ /GSM/ VPA2DD/ /VPA2DD / /IM01/ /IM02/	*Description:* The parameter is monitored by means of KPT conducted once every 2 years. *Verifier´s action:* The KPT report was reviewed for consistency with the data applied in ER spreadsheet. Operational manual implemented and operational personnel interviewed. The value stated in MR and ER spreadsheet was reviewed and compared with the KPT data and analysis for correctness *Conclusion:* The parameter is monitored in accordance to registered VPA-DD and applied methodology.	OK	OK
D.2.12. $MS_{P,S,K}$ **VPA-1: GS1174** **VPA-2: GS5303**		**Fraction of livestock category T's manure not treated in bio-digester, in climate region k**		
a) Measurement / Determination method (VVS, §§ 363-367) *Describe how the monitoring parameter was measured / determined. Focus primarily on the original*	/MRVPA 1/	*Description:* The fraction of manure not treated in the biodigesters for respective animal category as follows:	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
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 PDD and the applied methodology.*	/MRVPA2/ /BUS/ /ERVPA1/ /ERVPA2 /VPA1DD/ /VAP2DD/ /GSM/	<table><tr><td>Category T</td><td>%</td></tr><tr><td>Dairy cow</td><td>19.0</td></tr><tr><td>Market Swine</td><td>0</td></tr></table> The data was derived from the usage survey conducted by an independent consultant. *Verifier´s action:* The usage survey database was reviewed and cross-checked with the date applied in the ER spreadsheet for consistency *Conclusion:* The parameter is monitored according to the registered VPA-DD and applied methodology.		
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 368-374) *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.*	/MRVPA1/ /MRVPA2/ /BUS/ /ERVPA1/ /ERVPA2	*Description:* The data is calculated based on the usage survey results and no instrument is used. *Verifier´s action:* The data applied in ER spreadsheet was cross-checked with the usage survey results for consistency and correctness Operational manual implemented and operational personal interviewed.	OK	OK

Checklist Item (incl. guidance for the verification team)		Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
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 Appendix 6.*		/QA1/ //IM01/ /IM02/	*Conclusion:* The data in ER spreadsheet is consistent with the usage survey database.		
D.2.13. $MS_{T,S,K}$	**VPA-1: GS1174** **VPA-2: GS5303**		**Fraction of livestock category T's manure fed into the bio-digester, S in climate region k**		
a) Measurement / Determination method (VVS, §§ 363-367) *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 PDD and the applied methodology.*		/MRVPA 1/ /MRVAP 2 /BUS/ /ERVPA1 / /ERVPA2 / /VPA1DD / /\/PA2DD / /GSM/	*Description:* The fraction of manure fed in the biodigesters for respective animal category as follows: Category T | % Dairy cow | 81 Market Swine | 0 The data was derived from the usage survey conducted by an independent consultant. *Verifier´s action:* The usage survey database was reviewed and cross-checked with the date applied in the ER spreadsheet for consistency. *Conclusion:* The parameter is monitored according to the registered VPA-DD and applied methodology.	~~OK~~	OK

Checklist Item (incl. guidance for the verification team)		Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 368-374) *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.* *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 Appendix 6.*		/MRVPA 1/ /MRVPA 2/ /BUS/ /ERVPA1 / /ERVPA2 / /QA1/ /IM01/ /IM02/	*Description:* The data is calculated based on the usage survey results and no instrument is used. *Verifier´s action:* The data applied in ER spread-sheet was cross-checked with the usage survey results for consistency and correctness. Operational manual implemented and operational personal interviewed. *Conclusion:* The data in ER spread-sheet is consistent with the usage survey database.	OK	OK
D.2.14. GWP_{CH4}	**VPA-1: GS1174** **VPA-2: GS5303**		**Global Warming Potential of methane**		
a) Measurement / Determination method (VVS, §§ 363-367) *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)).*		/MRVPA 1/ /MRVPA 2 /ERVPA1 / /IPC	*Description:* The GWP is the methane content applicable during the monitoring period is 25 for emissions generated as from 2013-01-01. *Verifier´s action:* The GWP data applied in the MR and ER spread-sheet were verified with 2006 IPCC for consistency	OK	OK

Checklist Item (incl. guidance for the verification team)		Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
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 PDD and the applied methodology.		/ERVPA2 /C/ /VPA1DD / /GSM/ /VPA2DD /	*Conclusion:* The parameter is monitored in accordance to the registered VPA-DD and applied methodology.		
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 368-374) *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. 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 Appendix 6.*		/MRVPA 1/ /MRVPA 2 /ERVPA1 / /ERVPA2 / /IPCC/ /QA1/	*Description:* The GWP value is not measured and derived from IPCC. *Verifier´s action:* The GWP for methane applied in MR and ER spread-sheet was cross-checked with 2006 IPCC for correctness. QA procedure is implemented The value was cross-checked with IPCC for correctness *Conclusion:* The data value applied is consistent with IPCC.	OK	OK
D.2.15. Bio	**VPA-1: GS1174 VPA-2: GS5303**		**Use of bio-slurry**		

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
a) Measurement / Determination method (VVS, §§ 363-367) *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 PDD and the applied methodology.*	/MRBPA 1/ /MRVPA 2/ /BUS/ /ERVPA1 / /ERVPA2 /	*Description:* The bio-slurry is used by households for grass farming and vegetables gardening activities. Based on the usage survey conducted 69.23% of households from VPA-1 and VPA2 apply bio-slurry for the farming and gardening activities. The PP had calculated the emission from the use of bio-slurry is per household per year is 0.014tCO_2e/y/hh. Although the emission is less than 1% of emission reductions of 1.586 tCO_2/year/hh for VPA-1 and VPA-2, the PP has deducted from the baseline emissions. Therefore, is conservative. *Verifier´s action:* The survey result was reviewed to cross-checked on the percentage of households apply bio-slurry for farming activities. From the onsite inspection and telephone interviews of 325 households, 74% households apply bio-slurry for farming or gardening activities. The data applied in the ER spreadsheet was verified and the project emissions calculation for bio-slurry was reviewed and could conclude the emissions from bio-slurry is included in the ER calculations. *Conclusion:* The parameter is monitored according to the registered VPA-DD and applied methodology	~~CAR D5~~	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		Refer CAR D5 raised for VPA-2		
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 368-374) *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.* *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 Appendix 6.*	/MRVPA 1/ /MRVPA 2/ /BUS/ /ERVPA1 / /ERVPA2 / /QA1/	*Description:* The data was consolidated from the usage survey results and no equipment was involved in monitoring. The data was calculated using data from the usage survey results *Verifier´s action:* The usage survey results were reviewed. The calculation in the ER spreadsheet was reviewed and cross-checked with the survey results for consistency. The emissions from Bio-slurry is included in the ER calculation as PE. Operation manual procedure implemented and operation personnel interviewed. *Conclusion:* By mean of document review, the calculation for project emissions from usage of bio-slurry is determined correctly.	OK	OK
D.3. SD Indicators Monitored				
D.3.1. GS-03:	**VPA-1: GS1174** **VPA-2: GS5303**	**Soil condition**		

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
a) Measurement / Determination method GS Annex I, GS Annex AC, GS Annex G) *Describe how the monitoring parameter was measured / determined. Focus primarily on the registered VPA-DD and GS Passport and check what has been achieved relative to the baseline scenario.* *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 VPA-DD and relevant GS Annexes.*	/MRVPA1/ /MRVPA2/ /BUS/ /ERVPA1/ /ERVPA2/ /LHH/	*Description:* The number of households used bio-slurry for farming activities reported was 69.23% for both VPAs. The data was derived from the Biogas Usage Survey. *Verifier´s action:* The usage survey report was reviewed and cross-check during the site inspection and telephone interviews that 59 (approx. 85%) of the randomly selected households apply bio-slurry for farming activities *Conclusion:* The monitoring of the indicator is consistent with the GS Passport. Refer CAR F1 raised for both VPAs.	~~CAR F1~~	OK
b) Correctness and Scoring *Determine whether the monitoring method/value given in the sustainability monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered passport detailed assessment of the conservativeness of the approach used should be given.* *Score in accordance to Toolkit Annex I* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/MRVPA1/ /MRVPA2/ /BUS/ /ERVPA1/ /ERVPA2/ /LHH/	☐ Correct ☒ Not correct (initial assessment) *Description:* The value of the data in the monitoring report was based on the survey report. *Verifier´s action:* The survey report was reviewed and compared with the results of the onsite inspection and telephone interviews conducted by the verification team for the usage of bio-slurry for farming *Conclusion:* The data of the survey is incorrect Refer CAR F1 raised for both VPAs	~~CAR F1~~	OK

Checklist Item (incl. guidance for the verification team)		Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
			Score: The number of households using bio slurry as fertilizers for their farming activities for this monitoring period as compared to the baseline scenario is zero. Therefore, the score is positive as per the Toolkit 2.1 Annex I.		
D.3.2. GS-06:	**VPA-1: GS1174** **VPA-2: GS5303**		**Quality of employment**		
a) Measurement / Determination method ***VVS, §§ 389, 393, GS Annex I, GS Annex AC, GS Annex G)*** *Describe how the monitoring parameter was measured / determined. Focus primarily on the registered VPA-DD and GS Passport and check what has been achieved relative to the baseline scenario.* *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 VPA-DD and relevant GS Annexes.*		/MRVPA 1/ /MRVPA 2/ /VAP1DB / /VPA2DB / /IM04/	*Description:* The number of vocational training conducted during the monitoring period was 1,377 for VPA-1 and 51 for VPA-2. There is no change for VPA-1 since the VPA has stopped installing digesters as from 2016-12-31. The monitoring of such number of training conducted was by means of reporting by the provincial offices to the central office where the data is processed and captured in the project database. *Verifier´s action:* The training records in the project database were verified and confirmed through interviews with the provincial officials and supervisors during the site visit. *Conclusion:* The monitoring of the indicator is consistent with the GS Passport. Refer CAR F2 raised for VPA-2	~~CAR F2~~	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
b) Correctness and Scoring *Determine whether the monitoring method/value given in the sustainability monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered passport detailed assessment of the conservativeness of the approach used should be given.* *Score in accordance to Toolkit Annex I* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/MRVPA 1/ MRVPA2 / /VPA1DB / /VPA2DB / /IM01/ /IM04/	☐ Correct ☒ Not correct (initial assessment) *Description:* The data is monitored by means of keeping track of the number vocational training and captured in the project database. *Verifier´s action:* The database and training records were verified during onsite and interviewed conducted *Conclusion:* The data can be cross-checked for correctness. Refer CAR F2 raised for VPA-2 *Score:* The number of vocational training conducted for this monitoring period as compared to the baseline scenario is zero. Therefore, the score is positive as per the Toolkit 2.1 Annex I.	~~CAR F2~~	OK
D.3.3. GS-07: **VPA1: GS1174** **VPA-2: GS5303**		**Livelihood of the poor**		
a) Measurement / Determination method ***VVS, §§ 389, 393, GS Annex I, GS Annex AC, GS Annex G)*** *Describe how the monitoring parameter was measured / determined. Focus primarily on the*	/MRVPA 1/ MRVPA2 / /BUS/	*Description:* The improvement to the living conditions of the households with the installation of the bio-digesters was based on the usage survey conducted by an independent 3rd party. During this monitoring period, the reported data as below:	~~CAR F2~~ ~~CAR F3~~	OK OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
registered VPA-DD and GS Passport and check what has been achieved relative to the baseline scenario. *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 VPA-DD and relevant GS Annexes .*	/ERVPA1/ /ERVPA2/ /VPA2DB/ /VPA2DB/ /LHH/ /IM03/	<table><tr><td>VPA</td><td>Improved</td><td>Same</td><td>Worsened</td></tr><tr><td>VPA-1</td><td>16,942</td><td>3,311</td><td>0</td></tr><tr><td>VPA-2</td><td>1,665</td><td>325</td><td>0</td></tr></table> *Verifier´s action:* The usage survey report and records was verified. During the onsite visits, households were interviewed and could confirm the improvement in the living conditions with the installation of digester. *Conclusion:* The monitoring of the indicator is consistent with the GS Passport. Refer CAR F2 raised for VPA-1 and CAR F3 raised for VPA-1 and VPA-2.		
b) Correctness and Scoring *Determine whether the monitoring method/value given in the sustainability monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered passport detailed assessment of the conservativeness of the approach used should be given.* *Score in accordance to Toolkit Annex I*	/MRVPA1/ /MRVPA2/ /BUS/ /ERVPA1/ /ERVPA2/	☐ Correct ☒ Not correct (initial assessment) *Description:* The data is monitored by means of usage survey. *Verifier´s action:* The survey report was reviewed and onsite inspection could confirm the improvement of the living conditions. *Conclusion:* The database was verified and found inconsistency.	~~CAR F2~~ ~~CAR F3~~	OK OK

Checklist Item (incl. guidance for the verification team)		Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.		/LHH/	Refer CAR F2raised for VPA-1 and CAR F3 raised for VPA-1 and VPA-2. *Score:* The number of households reported improvement to living conditions for this monitoring period as compared to the baseline scenario is zero. Therefore, the score is positive as per the Toolkit 2.1 Annex		
D.3.4. GS-08:	**VPA-1: GS1174** **VPA-2: GS5303**		**Access to affordable and clean energy services**		
a) Measurement / Determination method ***VVS, §§ 389, 393, GS Annex I, GS Annex AC, GS Annex G)*** *Describe how the monitoring parameter was measured / determined. Focus primarily on the registered VPA-DD and GS Passport and check what has been achieved relative to the baseline scenario.* *Furthermore, verify the frequency of measurements as per the requirements.*		/MRVPA 1/ /MRVPA 2/ /VPA1DB / /VPA2DB / /BUS/ /IM04/	*Description:* The number of bio-digesters implemented that benefit as at 2017-12-31 for VPA-1 was 20,253 and VPA-2 was 1,990. The data is derived from the project database with the number of digesters implemented reported by the provincial offices to the central office where the data is processed and captured in the project database. *Verifier´s action:* The project database was reviewed and the data handling process was confirmed through interviews with the provincial officials during the site visit.	~~CAR F4~~	OK

Checklist Item (incl. guidance for the verification team)		Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPA-DD and relevant GS Annexes.			*Conclusion:* The monitoring of the indicator is consistent with the GS Passport. Refer CAR F4 raised for VPA-1 and VPA-2		
b) Correctness and Scoring *Determine whether the monitoring method/value given in the sustainability monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered passport detailed assessment of the conservativeness of the approach used should be given.* *Score in accordance to Toolkit Annex I* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*		/MRVPA 1/ /MRVPA 2/ /VPA1DB / /VPA2DB / /ERVPA1 / /ERVPA2 /	☐ Correct ☒ Not correct (initial assessment) *Description:* The data is monitored by means of keeping track of the number digesters implemented at each province, reported and captured in the project database. *Verifier´s action:* The database was verified for correctness *Conclusion:* Inconsistency found for VPA-1 and VPA-2. Refer CAR F4 raised for both VPAs. *Score:* The number of digesters implemented as at 2017-12-31 as compared to the baseline scenario is zero. Therefore, the score is positive as per the Toolkit 2.1 Annex I.	~~CAR F4~~	OK
D.3.5. GS-09:	**VPA-1: GS1174** **VPA-2: GS5303**		**Human and institutional capacity**		

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
a) Measurement / Determination method ***VVS, §§ 389, 393, GS Annex I, GS Annex AC, GS Annex G)*** *Describe how the monitoring parameter was measured / determined. Focus primarily on the registered VPA-DD and GS Passport and check what has been achieved relative to the baseline scenario.* *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 VPA-DD and relevant GS Annexes. .*	/MRVPA 1/ /MRVPA 2/ /VPA1DB / /VPA2DB / /ERVPA1 / /ERVPA2 / /BUS/	*Description:* The number of operational and maintenance trainings conducted during the monitoring period for VPA-1 was 4,072 and VPA-2 was 708. The monitoring for such training conducted was done by means of reporting from the provincial offices to the central office where the data is processed captured in the project database. In addition, during the annual usage survey, the households women were interviewed for cross-checking on the training attended. *Verifier´s action:* The training records were verified and the data handling process was confirmed through interviews with the provincial officials and households during the site visit. The project database and usage survey records were reviewed. *Conclusion:* The monitoring of the indicator is consistent with the GS Passport. Refer CAR F5 raised for VPA-2	~~CAR F5~~	OK
b) Correctness and Scoring *Determine whether the monitoring method/value given in the sustainability monitoring report is correct or determined in a conservative manner.*	/MRVPA 1/ /MRVPA 2/	☐ Correct ☒ Not correct (initial assessment) *Description:* The data is monitored by means of keeping track of the number training conducted captured in the project database.	~~CAR F5~~	OK

Checklist Item (incl. guidance for the verification team)		Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
In case of conservative approaches used in lieu of the monitoring as per registered passport detailed assessment of the conservativeness of the approach used should be given. *Score in accordance to Toolkit Annex I* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*		/ERVPA1/ /ERVPA2/ /VPA2DB/ /VPA1DB/ /BUS/ /LHH/ /Imo4/	*Verifier´s action:* The database and training records were checked by the verification team. *Conclusion:* The data can be confirmed for correctness for VPA-1 Refer CAR F5 raised for VPA-2 *Score:* The number of vocational training conducted for this monitoring period as compared to the baseline scenario is zero. Therefore, the score is positive as per the Toolkit 2.1 Annex I.		
D.3.6. GS-10:	**VPA-1: GS1174** **VPA-2: GS5303**		**Quantitative employment and income generation**		
a) Measurement / Determination method ***VVS, §§ 389, 393, GS Annex I, GS Annex AC, GS Annex G)*** *Describe how the monitoring parameter was measured / determined. Focus primarily on the registered VPA-DD and GS Passport and check what has been achieved relative to the baseline scenario.* *Furthermore, verify the frequency of measurements as per the requirements.*		/MRVPA1/ /MRVPA2/ /VPA1DB/ /VPA2DB/	*Description:* The number of employment created for this monitoring period as follows: VPA | Direct Job | No. Households sell bio-slurry VPA-1 | 1,502 | 1,168 VPA-2 | 52 | 115 The number of jobs created is derived by the project database records submitted by the provincial offices to the central office where the data is processed and keyed in the project database.	~~CAR F5~~	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPA-DD and relevant GS Annexes. .	/ERVPA1/ /ERVPA2/ /BUS/ /IM01/ /IM04/	The number of households who sells the bio-slurry is derived from the usage survey report. *Verifier´s action:* The employment records were reviewed and the data handling process was confirmed through interviews with the provincial officials and supervisors during the site visit. The usage survey report was reviewed to cross-checked on the number of households sells bio-slurry and interviews conducted during onsite visits. *Conclusion:* The monitoring of the indicator is consistent with the GS Passport. Refer6 CAR F5 raised for VPA-2.		
b) Correctness and Scoring *Determine whether the monitoring method/value given in the sustainability monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered passport detailed*	/MRVPA1/ /MRVPA2/ /BUS/	☐ Correct ☒ Not correct (initial assessment) *Description:* The data is monitored by means of keeping track of the number employment captured in the project database. The quantity of households selling bio-slurry is based on the survey report.	~~CAR F6~~	OK

Checklist Item (incl. guidance for the verification team)		Refe-rence	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
assessment of the conservativeness of the approach used should be given. *Score in accordance to Toolkit Annex I* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*		/ERVPA1/ /ERVPA2/ /LHH/ /IM04/	*Verifier´s action:* The database and survey records were verified and households interviewed. *Conclusion:* The data for VPA-1 is confirmed correct. Refer CAR F6 raised for VPA-2 *Score:* The number of employment created and household sell bio-slurry for this monitoring period as compared to the baseline scenario is zero. Therefore, the score is positive as per the Toolkit 2.1 Annex I.		
D.3.7. GS-12:	**VPA-1: GS1174** **VPA-GS5303**		**Technology transfer and technological self-reliance**		
a) Measurement / Determination method ***VVS, §§ 389, 393, GS Annex I, GS Annex AC, GS Annex G)*** *Describe how the monitoring parameter was measured / determined. Focus primarily on the registered VPA-DD and GS Passport and check what has been achieved relative to the baseline scenario.* *Furthermore, verify the frequency of measurements as per the requirements.*		/MRVAP1/ /MRVAP2/ /ERVPA1/ /ERVPA2/	*Description:* The number of operational and maintenance trainings conducted during the monitoring period for VPA-1 is 17,090 and VPA-2 is 2,758 The monitoring of such number of training conducted was done by means of reporting from the provincial offices to the central office where the data is processed and entered into the project database. *Verifier´s action:* The training records were verified and the data handling process was confirmed through interviews with the provincial officials during the site visit.	~~CAR F6~~	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPA-DD and relevant GS Annexes. .	/VPA1DD /VPA2DB / /IM01/ /IM04/	The project database and training records were reviewed *Conclusion:* The monitoring of the indicator is consistent with the GS Passport. VPA-2. Refer CAR F6 raised.		
b) Correctness and Scoring *Determine whether the monitoring method value given in the sustainability monitoring report is correct or determined in a conservative manner.* *In case of conservative approaches used in lieu of the monitoring as per registered passport detailed assessment of the conservativeness of the approach used should be given.* *Score in accordance to Toolkit Annex I* *In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.*	/MRVAP 1/ /MRVAP 2/ /ERVPA1 / /ERVPA2 / /VPA1DB / /VPA2DB / /IM01/ /IM04/	☐ Correct ☒ Not correct (initial assessment) *Description:* The data is monitored by means of keeping track the number of training conducted and entered into the project database. *Verifier´s action:* The database and training records were checked during onsite visit for correctness *Conclusion:* No issues found for VPA-1. Refer CAR F6 raised for VPA-2. *Score:* The number of training conducted for this monitoring period as compared to the baseline scenario is zero. Therefore, the score is positive as per the Toolkit 2.1 Annex I.	~~CAR E6~~	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
D.4. Sampling				
a) Implementation of sampling plan ***(EB75 Annex 7; D3, EB74, Annex 6)*** *Check whether the PP 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:* *a) Description of the implemented sampling design* *b) Collected data* *c) Analysis of collected data* *d) Demonstration on whether the required confidence/precision has been met (when no specific guidance in the applied methodology, 90/10 confidence/precision for SSC and 95/10 confidence/precision for LSC) and samples were representative of the population.* *e) Confirmation on the application of samplings separately and independently for each of the VPAs or a sampling covering a group of VPAs is undertaken applying 95/10 confidence/precision*	/MR/ /GSP/ /VPA1/ /S1/ /S2/ /SSS/ /GSS/	☒ A sampling approach has been taken by the PP due to large number of implemented bio-digesters. *Description:* The sampling as described in the MR is based on GS guidelines for following data: 1. Usage Survey 2. KPT *Verifier´s action:* The Kitchen Performance Tests were conducted during this monitoring period and remain valid for two years. The verification team has checked on the sampling plan for US 110 households and considered appropriate. An addition of 10% has been included to ensure the level of assurance and the number of households is representative. The data collected were reviewed and cross checked during the onsite field inspection on the selected households to confirm the correctness. *Conclusion:* The sampling plan applied by the PP is incompliance to GS recommendation and according to guidelines of UNFCCC.	OK	OK

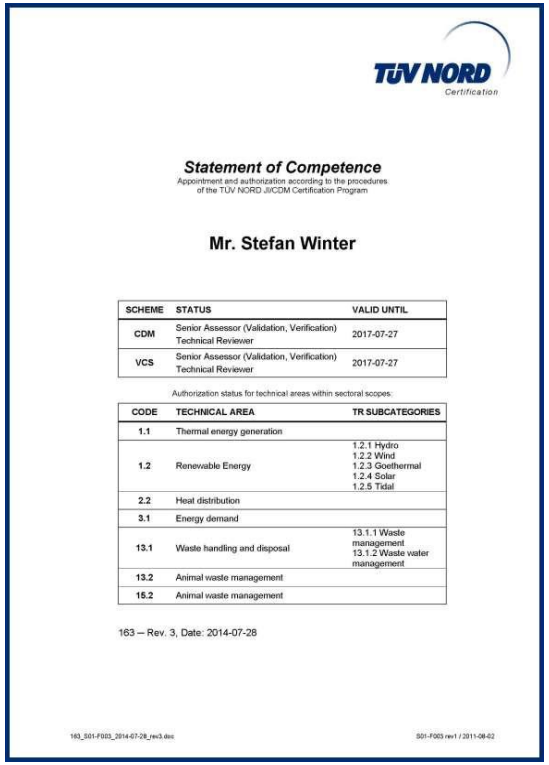
Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
b) Sampling during verification w.r.t. the monitoring parameters ***(EB74, Annex 6, §24-29)*** *In case the VT has applied a sampling approach in the course of the verification the approach shall be described for each parameter.*	/SSP/	☒ 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: ***Parameter: Name_of Parameter*** *Description:* *Conclusion:*		
c) Sampling during verification w.r.t. on-site visits ***(VVS, §298)*** *Explained here the sampling approach taken by the VT in order to determine the amount of VPAs that shall be visited, if applicable.* *For VPAs complying with different versions of the PoA, a statistically sound sample of VPAs from each version of the PoA have to be verified.*	/MR/ /DB1/	☐ No sampling approach has been used by the VT to determine the number of VPAs or households to be visited **OR**. ☒ A sampling approach has been applied by the VT in order to determine the number of VPAs or households to be visited: *Description:* The selected 102 number of households for the onsite inspection is determined using a 90/30 rule according to the GS requirements to ensure the confidence level of 90% is achieved. The sample size was determined using the below method. http://www.raosoft.com/samplesize.html In addition telephone interviews for 223 households were conducted to ensure the accuracy of the usage survey results.	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
E. Calculation of Emission reductions				
E.1. Traceability ***(VVS, §§ 212, 214)*** *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.*	/MRCPA 1/ /MRCPA 2/ /ERVPA1 / /ERVPA2 /	The verification team has checked the emission reduction calculation and confirms that: ☐ the calculation is fully traceable ☒ all applied formulae are visible In this context the following finding has been identified: VPA-1 Refer finding CAR E1, CAR E2, CAR E3, CAR E4 and CAR E5 raised VPA-2: Refer finding CAR E1, CAR E2, CAR E3, CAR E4, CAR E5 and CAR E6 raised	~~CAR E1~~ ~~CAR E2~~ ~~CAR E3~~ ~~CAR E4~~ ~~CAR E5~~ ~~CAR E6~~	OK OK OK OK OK OK
E.2. Parameter consistency ***(VVS, § 214)*** *Assess whether all internal and external parameters and data used for calculation are applied consistently in the monitoring report and the calculation spreadsheet.* *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 VPA-DD, MR and calculation spreadsheet.*	/MRCPA 1/ /MRCPA 2/ /ERVPA1 / /ERVPA2 /	The verification team has checked the emission reduction calculation and the MR and confirms that: ☒ all parameter notations are consistent in the project documentation ☐ all internal and external parameters and data used for calculation are consistently applied In this context the following findings have been identified: VPA-1 Refer finding CAR E1, CAR E2, CAR E3, CAR E4 and CAR E5 raised VPA-2: Refer finding CAR E1, CAR E2, CAR E3, CAR E4, CAR E5 and CAR E6 raised	~~CAR E1~~ ~~CAR E2~~ ~~CAR E3~~ ~~CAR E4~~ ~~CAR E5~~ ~~CAR E6~~	OK OK OK OK OK OK
E.3. Correctness of calculation	/MRCPA 1/	The verification team has checked the emission reduction calculation and the MR and confirms that:	~~CAR E2~~	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
(VVS, §§ 244-245) *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.* *Assess whether the provided calculations are complete and reflect all requirements of the monitoring plan.* *Check especially that no standard or old values have been used for calculation where calculations based on up-to-date data is required.* *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.*	/MRCPA 2/ /ERVPA1 / /ERVPA2 /	☒ all applied formulae for calculating baseline emissions, project emissions and leakage are in accordance with the monitoring plan ☐ the provided calculations are complete In this context the following findings have been identified: VPA-1 Refer finding CAR E2, CAR E3 and CAR E5 raised VPA-2: Refer finding CAR E2, CAR E3 and CAR E6 raised	~~CAR E3~~ ~~CAR E5~~ ~~CAR E6~~	OK OK OK
E.4. Emission reductions table ***(EB 75, Annex 7, E.4)*** *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.*	/MRCPA 1/ /MRCPA 2/ /ERVPA1 / /ERVPA2 /	☒ The MR includes a summary table of the emission reductions calculation. ☒ 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 require changes in the ER calculation.	~~CAR E2~~ ~~CAR E3~~ ~~CAR E5~~ ~~CAR E6~~	OK OK OK OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verification Team Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
Assess whether the values are correct or need to be revised as a consequence of issues identified above.		☐ During the verification issues with impact on the ER calculation have been identified. Thus subject to the closure of above listed findings the summary needs to be revised. In this context the following additional findings have been identified: VPA-1 Refer finding CAR E2, CAR E3 and CAR E5 raised VPA-2: Refer finding CAR E2, CAR E3 and CAR E6 raised		
E.5. Comparison with ex-ante determined emission reductions ***(EB 75, Annex 7, E.5; E.6)*** *Check if the MR includes a comparison of actual values of the monitoring period with the estimations in the registered VPA-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 PP and – if this is case – whether the PRC have been considered appropriately.*	/MRCPA1/ /MRCPA2/ /ERVPA1/ /ERVPA2/ VPA1DD /VPA2DD/	The verification team has checked the MR and confirms that: ☒ the MR includes a comparison of actual emission reductions with the estimations of the registered VPA-DD ☒ the increase or decrease has been appropriately explained In this context no findings have been identified:	OK	OK

ANNEX 2: STATEMENTS OF COMPETENCE OF INVOLVED PERSONNEL



TÜV NORD Certification

Statement of Competence

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

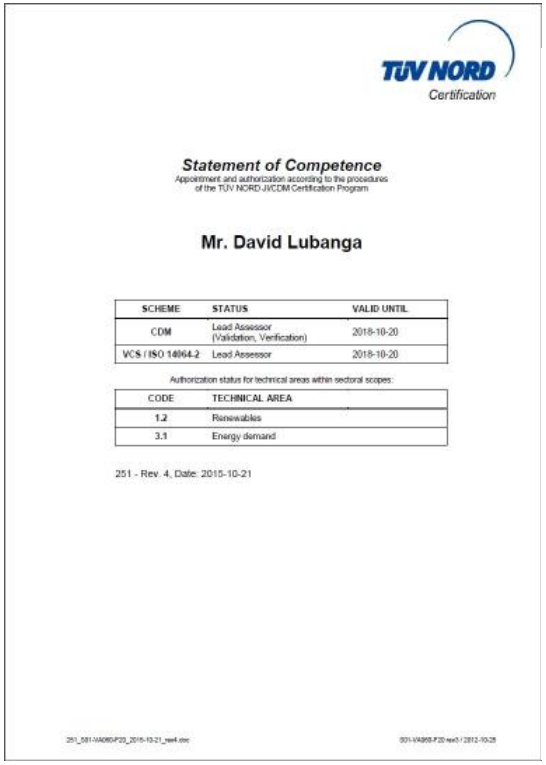
Mr. Stefan Winter

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2017-07-27
VCS	Senior Assessor (Validation, Verification) Technical Reviewer	2017-07-27

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA	TR SUBCATEGORIES
1.1	Thermal energy generation	
1.2	Renewable Energy	1.2.1 Hydro 1.2.2 Wind 1.2.3 Goethermal 1.2.4 Solar 1.2.5 Tidal
2.2	Heat distribution	
3.1	Energy demand	
13.1	Waste handling and disposal	13.1.1 Waste management 13.1.2 Waste water management
13.2	Animal waste management	
15.2	Animal waste management	

163 – Rev. 3, Date: 2014-07-28



TÜV NORD Certification

Statement of Competence

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

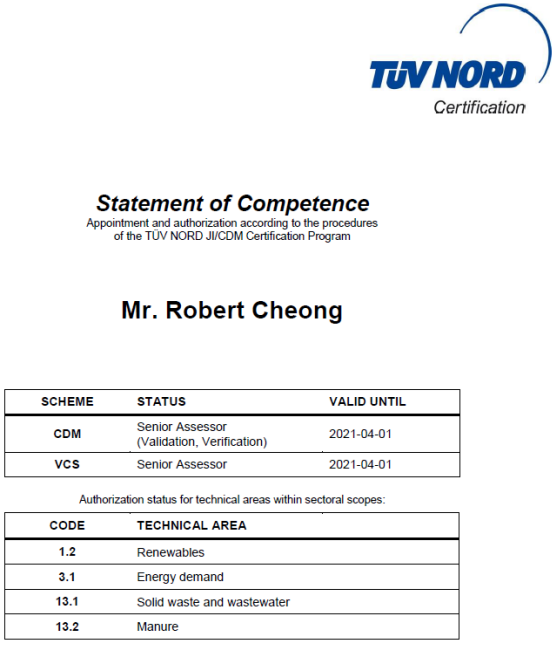
Mr. David Lubanga

SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor (Validation, Verification)	2018-10-20
VCS / ISO 14064-2	Lead Assessor	2018-10-20

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
3.1	Energy demand

251 - Rev. 4, Date: 2015-10-21



TÜV NORD Certification

Statement of Competence

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

Mr. Robert Cheong

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification)	2021-04-01
VCS	Senior Assessor	2021-04-01

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
3.1	Energy demand
13.1	Solid waste and wastewater
13.2	Manure

128 - Rev. 9, Date: 2018-03-19