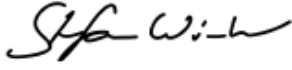


### Verification and certification report form for GS Voluntary Project Activity

*Complete this form in accordance with the instructions attached at the end of this form.*

#### BASIC INFORMATION

<b>Title and GS reference number of the Voluntary Project Activity (VPA)</b>	Indonesia Domestic Biogas Programme of Activities (IDBP) VPA-2 (ID GS5303)  PoA: Indonesia Domestic Biogas Programme of Activities (IDBP) (ID 1172)  Project No: 21/011 – MY-PVerGS 21/04	
<b>Version number(s) of the VPA-DD to which this report applies</b>	1.4	
<b>Version number of the verification and certification report</b>	1.3	
<b>Completion date of the verification and certification report</b>	29/11/2021	
<b>Monitoring period number and duration of this monitoring period</b>	CPI MP: 4 Duration: 01/01/2020 – 31/12/2020 (both dates inclusive)	
<b>Number and version number of the monitoring report to which this report applies</b>	Number: 1 Version: 1.6	
<b>Project Representative</b>	Project Representative - HIVOS VPA Implementer: Yayasan Rumah Energi (YRE)	
<b>Host Parties</b>	Host Parties of the PoA	Is this a host Party to a VPA covered in this report? (yes/no)
	Indonesia	Yes
<b>Applied methodologies and standardized baselines</b>	Technologies and Practices to Displace Decentralized Thermal Energy Consumption (11/04/2011)	
<b>Mandatory sectoral scopes linked to the applied methodologies</b>	Scope 1: Energy industries (renewable-/non-renewable sources)  Scope 13: Waste handling and disposal	
<b>Conditional sectoral scopes linked to the applied methodologies, if applicable</b>	-	
<b>Estimated amount of ex-ante GHG emission reductions or GHG removals for this monitoring period in the included VPAs covered in this report</b>	27,311 tCO <sub>2</sub> e	
<b>Certified amount of GHG emission reductions or GHG removals for this monitoring period for the included VPAs covered in this report</b>	10,975 tCO <sub>2</sub> e	

<b>Name of the VVB</b>	TÜV NORD CERT GmbH
<b>Name, position and signature of the approver of the verification and certification report</b>	 Stefan Winter Senior Assessor/Final Approver

**SECTION A. Executive summary**

Yayasan Rumah Energi (YRE) has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 4<sup>th</sup> periodic verification of CPI of the Voluntary Project Activity:

**“Indonesia Domestic Biogas Programme of Activities (IDBP) (ID 1172), VPA-2 (GS 5303)”**

The VPA was registered with GS on 04/05/2017 with the 1<sup>st</sup> crediting period from 02/01/2017 to 01/01/2024 (including both dates) according to the GS registration review. The first biogas digester included in the VPA was commissioned on 02/01/2017, which is the VPA start date.

The VPA aims to reduce GHG emissions to stimulate the use of biogas systems to replace traditional thermal energy generation methods by making biogas systems affordable and available to households.

This verification report covers the monitoring period from 01/01/2020 to 31/12/2020 (including both days).

Details of the VPA location in table A-1 below:

**Table A-1: Project Location**

Item	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 <sup>1</sup>	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 <sup>2</sup>	5° 8' 51.5940" S	119° 25' 57.8352" E

The biodigester type implemented is the fixed-dome type, constructed with bricks and stone masonry. The generated biogas intended for use as fuel for cooking

**Table A-2: Technical data of the component project activity**

Plant size	1m <sup>3</sup>	2m <sup>3</sup>	3m <sup>3</sup>	4 m <sup>3</sup>	6 m <sup>3</sup>	8 m <sup>3</sup>	10 m <sup>3</sup>	12 m <sup>3</sup>
Manure requirements (kg/day)	10	15	23	32	48	64	80	96
Estimated biogas production (m <sup>3</sup> /day)	0.34	0.51	0.8	0.8	1.6	2.4	3.2	4.2
Estimated firewood savings (kg/day)	1.7	2.5	3.9	2.8	5.6	8.4	11.2	14.7

The VPA-2 meets the small-scale thresholds set forth by the CDM i.e., 15 MW or 45 MW<sub>th</sub> for the renewable energy component and an emissions cap of 60,000 tCO<sub>2</sub>e for the methane avoidance component.

The below table indicates the cumulative capacity of the VPA is 7.22 MW<sub>th</sub> and below the 45 MW<sub>th</sub> threshold for this monitoring period.

<sup>1</sup> Include Banten and Sumatera Selatan provinces

<sup>2</sup> Include Kalimantan Selatan province

$Th_{cap} = \frac{E}{t} \quad \text{where} \quad E = \eta * H_b * V_b$		
Where:	Value:	Comments:
t = hours/day usage	2.74	See "Crosstab BUS by Province_18May2016.xls", sheet "raw_data" cell J2683. Fixed for future verifications
$\eta$ = efficiency of stove	50%	Indonesian Government standard on stove efficiency
$H_b$ = heat of combustion per unit volume of biogas	21.0 MJ/m <sup>3</sup>	Derived from IPCC defaults
$V_b$ = volume of biogas	1.46 m <sup>3</sup> /day	Data provided by Hivos
E = Energy available from the biogas system	15.37 MJ/day	Calculated
$E_{th}$ =	4.27 kWh/day	1 MJ = 0.2778 kWh
$Th_{cap}$ =	1.56 kW <sub>th</sub>	Given a 2.74 hour/day usage
Total capacity	7.22 MW <sub>th</sub>	Given 4,636 units installed

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 approved Transition Annex for the PoA and VPA.
- the monitoring plan is in accordance with the applied approved GS methodology, i.e., Technologies and Practices to Displace Decentralized Energy Consumption (dated 11/04/2011)
- the monitoring system is in place and functional. The project has generated GHG emission reductions.

As the result of the CPI 4<sup>th</sup> periodic verification, the VVB 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 VPA has achieved emission reductions in the above-mentioned reporting period as follows:

Emission reductions: **10,975 tCO<sub>2</sub>e**

## SECTION B. Verification team, technical reviewer and approver

### B.1. Verification team members

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader	EI	Cheong	Chun Yuen (Robert)	TN Malaysia	x	-	x	x
2.	Technical Expert / Enumerator	EI	Sutresniwati	-	NA	-	x	x	-

### B.2. Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)
1.	Technical reviewer	EI	Lubanga	David	-

**GS-VPA-VCR-FORM**

2.	Approver	IR	Winter	Stefan	TÜV NORD CERT GmbH
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**SECTION C. Means of verification****C.1. Desk/document review**

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

- the approved Transition Annex the PoA including the monitoring plan<sup>/TA/</sup>;
- the approved revised version of the VPA-DD<sup>/VPADD/</sup>;
- the GS approved version of the VPA validation report<sup>/VAL/</sup>;
- the GS review and approval of design change<sup>/DC/</sup>;
- the monitoring report, including the claimed emission reductions for the VPA<sup>/MR/</sup>;
- the emission reduction calculation spreadsheet<sup>/ER/</sup>.

Other supporting documents, such as any publicly available information and background information were reviewed.

**C.2. On-site inspection**

Duration of onsite & remote audit: 23/03/2021 to 26/03/2021, 02/04/2021 & 05/04/2021				
No.	Activity performed on-site	Site location	Date	Team member
1.	Review of MR, ER, DB, Survey reports, KPT, Leakage	Kuala Lumpur	02/04/2021	Cheong, Chun Yuen (Robert)
2.	Discussion of MR, ER, DB, Survey reports, Leakage, KP, interview results,		05/04/2021	
3	Households interviews and inspection	Lombok, Nusa Tenggara Barat	23/03/2021 to 26/03/2021	Sutresniwati

**Interviews /IM/**

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Mikolajczyk	Szymon	Consultant / Climate Focus /IM-01/	05/04/2021 - remote	MR, ER, DB, Survey reports, KPT, Leakage, Interviews Review of households' interviews results	Cheong, Chun Yuen (Robert)
2	Batur Romzini	Chabi (Bibah)	Senior Database Officer / Yayasan Rumah Energi /IM02/			
3	Ahmad	Jihan	Technical Field Officer / Yayasan Rumah Energi /IM02/			
4	Batur Romzini	Chabi (Bibah)	Senior Database Officer / Yayasan Rumah Energi /IM02/	23/03/2021 to 26/03/2021	Households Interviews onsite	Sutresniwati – Enumerator local expert
5.	Rita	Maria	Director / JRI Research /IM03/	05/04/2021 - remote	Survey results	Cheong, Chun Yuen (Robert)

**Onsite and Telephone Interview of Construction Partner Organization /CPO/**

CPO Code	CPO Name	Owner Name	Province
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ON	Yayasan Sion	Witono	Central Java
LH	Solihin Group	Solihin	Nusa Tenggara Barat
UB	Ujung Berung mason Group	Aris Suryana	West Java
WR	CV. Wahana Rizki	Wahidin	Nusa Tenggara Barat

**Telephone with Mason /M/**

Mason Code	Name	Province
ABM007	Siswanto	East Java
UGM025	M. Roni	Central Java
UBM002	Tatang	West Java
MJM001	Sanusi	West Nusa Tenggara

**Interview of Households / LHH/**

No.	List of randomly selected households.						
No.	Mo <sup>3</sup>	Plant Code	Householder Name	Location			
				Village	Sub-district	District	Province
1	V	SGP0511	Hj. Suharni	Sisik	Pringgarata	Lombok Tengah	Nusa Tenggara Barat
2	V	SGP0508	Salma	Sisik	Pringgarata	Lombok Tengah	Nusa Tenggara Barat
3	V	SGP0518	Jauni	Sisik	Pringgarata	Lombok Tengah	Nusa Tenggara Barat
4	V	SGP0372	Abdul Hasan	Sisik	Pringgarata	Lombok Tengah	Nusa Tenggara Barat
5	V	SGP0523	Henny	Sisik	Pringgarata	Lombok Tengah	Nusa Tenggara Barat
6	V	SGP0369	Serini	Sisik	Pringgarata	Lombok Tengah	Nusa Tenggara Barat
7	V	SGP0370	Suharni	Sisik	Pringgarata	Lombok Tengah	Nusa Tenggara Barat
8	V	SGP0371	Jedih	Sisik	Pringgarata	Lombok Tengah	Nusa Tenggara Barat
9	V	SGP0368	Nasir	Sisik	Pringgarata	Lombok Tengah	Nusa Tenggara Barat
10	V	SGP0367	Harianti	Sisik	Pringgarata	Lombok Tengah	Nusa Tenggara Barat
11	V	SGP0467	Suknak	Pringgarata	Pringgarata	Lombok Tengah	Nusa Tenggara Barat

<sup>3</sup> V = Visited; T = Telephone

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12	V	SGP0528	Sriasun	Pringgarata	Pringgarata	Lombok Tengah	Nusa Tenggara Barat
13	V	SGP0471	Junaidi	Pringgarata	Pringgarata	Lombok Tengah	Nusa Tenggara Barat
14	V	SGP0473	Serudi	Pringgarata	Pringgarata	Lombok Tengah	Nusa Tenggara Barat
15	V	SGP0468	Nisa	Pringgarata	Pringgarata	Lombok Tengah	Nusa Tenggara Barat
16	V	SGP0378	Sani	Pringgarata	Pringgarata	Lombok Tengah	Nusa Tenggara Barat
17	V	SGP0376	Muliani	Pringgarata	Pringgarata	Lombok Tengah	Nusa Tenggara Barat
18	V	SGP0382	Ayub	Pringgarata	Pringgarata	Lombok Tengah	Nusa Tenggara Barat
19	V	SGP0466	Sapi'i	Pringgarata	Pringgarata	Lombok Tengah	Nusa Tenggara Barat
20	V	SGP0501	Isnawati	Aik Mual	Praya	Lombok Tengah	Nusa Tenggara Barat
21	T	KIP0034	Mita Hidayat	Cikahuripan	Lembang	Bandung Barat	West Java
22	T	KIP0040	Karya	Pasirhalang	Cisarua	Bandung Barat	West Java
23	T	UBP0004	Atep Ahmad	Margamukti	Pangalengan	Bandung	West Java
24	T	UBP0066	Enyang Suryana	Tarumajaya	Kertasari	Bandung	West Java
25	T	Ubp0086	Dasep Koswara	Sukamanah	Pangalengan	Bandung	West Java
26	T	UBP0087	J. Suryana	Sukamanah	Pangalengan	Bandung	West Java
27	T	KUP0206	Dak Muh.Haris	Bulo-Bulo	Bulukumpa	Bulukumba	South Sulawesi
28	T	KUP0249	Dahlan	Sangkala	Kajang	Bulukumba	South Sulawesi
29	T	MDP0219	Apbd Syahrir	Samaturue	Tellu Limpoe	Sinjai	South Sulawesi
30	T	MDP0228	Apbd Basir B.	Mannanti	Tellu Limpoe	Sinjai	South Sulawesi
31	T	MDP0230	Apbd Saenal	Mannanti	Tellu Limpoe	Sinjai	South Sulawesi
32	T	MDP0329	Apbd, Muhammad Yusuf	Tellu Limpoe	Tellu Limpoe	Sinjai	South Sulawesi

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33	T	MDP0385	Safaruddin	Kalobba	Tellu Limpoe	Sinjai	South Sulawesi
34	T	MGP0112	Apbd Suttara	Kiru Kiru	Soppeng Riaja	Barru	South Sulawesi
35	T	RAP0022	Dak Ali	Bulujaya	Bangkala Barat	Jeneponto	South Sulawesi
36	T	RAP0049	Nawa	Loka	Rumbia	Jeneponto	South Sulawesi
37	T	RAP0055	Ahmad	Loka	Rumbia	Jeneponto	South Sulawesi
38	T	RNP0056	Apbd, Iman Alimuddin	Padakkalawa	Mattiro Bulu	Pinrang	South Sulawesi
39	T	RNP0089	Apbd Coni / Sakka	Pakeng	Lembang	Pinrang	South Sulawesi
40	T	RNP0181	Pak Amin	Amassangang	Lanrisang	Pinrang	South Sulawesi
41	T	RNP0213	Apbd Sada	Sipatuo	Patampanua	Pinrang	South Sulawesi
42	T	RNP0258	Sudirman	Data	Duampanua	Pinrang	South Sulawesi
43	T	RNP0298	Syamsuddin	Data	Duampanua	Pinrang	South Sulawesi
44	T	RNP0300	Marsudi	Pekkabata	Duampanua	Pinrang	South Sulawesi
45	T	RNP0391	Hasan	Teppo	Patampanua	Pinrang	South Sulawesi
46	T	RNP0399	Ali	Maccirinna	Patampanua	Pinrang	South Sulawesi
47	T	RNP0404	Arba	Maccirinna	Patampanua	Pinrang	South Sulawesi
48	T	YRE0001	Lamri	Sumber Harjo	Moilong	Banggai	South Sulawesi
49	T	YRE0002	Samin	Slametharjo	Moilong	Banggai	South Sulawesi
50	T	YRE0008	Misnadi	Slametharjo	Moilong	Banggai	South Sulawesi
51	T	LSP0086	I Putu Sumarka	Selat	Selat	Buleleng	Bali
52	T	MKP0325	I Gusti Agung Nyoman Sukarda	Bongkasa Pertiwi	Abiansemal	Badung	Bali



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53	T	MKP0344	I Nyoman Pineh Adnyana	Bongkasa Pertiwi	Abiansemal	Badung	Bali
54	T	MKP0354	I Ketut Darna	Bongkasa Pertiwi	Abiansemal	Badung	Bali
55	T	SLP0008	I Wayan Murta	Kutampi	Nusa Penida	Klungkung	Bali
56	T	BAP0107	Kalipan	Sidomulyo	Wates	Kediri	East Java
57	T	BAP0156	Riadi	Permanu	Pakisaji	Malang	East Java
58	T	KJP0783	Adt Setyo Bakti	Mulyoarjo	Lawang	Malang	East Java
59	T	KTP0215	Martawi	Kandangtepus	Senduro	Lumajang	East Java
60	T	KTP0226	Eko Yuli Zudiansyah	Madiredo	Pujon	Malang	East Java
61	T	NGP1467	Sutikno	Tulungrejo	Ngantang	Malang	East Java
62	T	NGP1510	Rudai	Pagersari	Ngantang	Malang	East Java
63	T	NGP1523	Sudarmanto	Waturejo	Ngantang	Malang	East Java
64	T	TWPp0597	Deni Purwanti	Geger	Sendang	Tulungagung	East Java
65	T	TWP0645	Elok Dewi Sari	Geger	Sendang	Tulungagung	East Java
66	T	TWP0675	Karjuni	Sendang	Sendang	Tulungagung	East Java
67	T	TWP0675	Karjuni	Sendang	Sendang	Tulungagung	East Java
68	T	FJP0059	Poktan Sukiman	Sidosari	Natar	Lampung Selatan	Lampung
69	T	HOP0213	Add Sugito	Sri Basuki	Batanghari	Lampung Timur	Lampung
70	T	HIP0212	Agus	Tawang Rejo	Sarang	REMBANG	Central Java
71	T	HIP0214	Wiyoto	Sendang Mulyo	Sluke	REMBANG	Central Java
72	T	HIP0215	Suratin	Sendang	Bringin	Semarang	Central Java
73	T	KPP0166	Adreas Hunga Kemarak	Luku Wingir	Kambata Mapambuhang	Sumba Timur	Nusa Tenggara Timur
74	T	KKP0193	Ratu Watuwaya	Umalulu	Umalulu	Sumba Timur	Nusa Tenggara Timur

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75	T	LWP0167	Apbd Mardon Bili/P.R.Bili	Wee Karou	Loli	Sumba Barat	Nusa Tenggara Timur
76	T	NUP0090	Bambang Sutejo	Rama Utama	Seputih Raman	Lampung Tengah	Lampung
77	T	RGP0123	Al Amin/Ahmad Sutrisno(Aslinya)	Sangun Ratu	Pubian	Lampung Tengah	Lampung
78	T	RGP0159	Sudiro	Ponco Warno	Kalirejo	Lampung Tengah	Lampung
79	T	ROP0015	Pekambani, Fransiskus K.	Prailiu	Kambera	Sumba Timur	Nusa Tenggara Timur
80	T	YLP0118	CSR Unila M.Darmoko / Pak Fatah	Rejo Agung	Batanghari	Lampung Timur	Lampung
81	T	PCP0304	Naharudin	Jembatan Kembar Timur	Lembar	Lombok Barat	Nusa Tenggara Barat
82	T	SGP0345	Amaq Nehan	Sisik	Pringgarata	Lombok Tengah	Nusa Tenggara Barat
83	T	SGP0351	Mursalim	Kopang Rembiga	Kopang	Lombok Tengah	Nusa Tenggara Barat
84	T	SGP0683	Badilah	Selat	Narmada	Lombok Barat	Nusa Tenggara Barat
85	T	SGP0684	Dedi Suhadi	Ranjok	Gunung Sari	Lombok Barat	Nusa Tenggara Barat
86	T	SGP0685	Hulaifi, Sh	Dasan Geres	Gerung	Lombok Barat	Nusa Tenggara Barat
87	T	SGP0686	I Gede Nail	Bertais	Sandubaya	Kota Mataram	Nusa Tenggara Barat
88	T	SGP0687	Alamsyah	Kekalik Jaya	Sekarbela	Kota Mataram	Nusa Tenggara Barat
89	T	WRP0062	Jurmiah	Ketangga	Suela	Lombok Timur	Nusa Tenggara Barat
90	T	WRP0066	Murni	Ketangga	Suela	Lombok Timur	Nusa Tenggara Barat

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91	T	BPP0074	Musriah	Bangun Harjo	Sewon	Bantul	D.I. Yogyakarta
92	T	BPP0091	Dwijo Seno Warsito	Sendang Mulyo	Minggir	Sleman	D.I. Yogyakarta
93	T	BPP0102	Suyono	Tirtosari	Kretek	Bantul	D.I. Yogyakarta
94	T	BPP0113	Murtijo	Tirtosari	Kretek	Bantul	D.I. Yogyakarta
95	T	HIP0001	Rumah Ilham	Sinduharjo	Ngaglik	Sleman	D.I. Yogyakarta
96	T	HIP0002	Theresia	Sinduharjo	Ngaglik	Sleman	D.I. Yogyakarta
97	T	HIP0014	Sukapdi	Sendang Agung	Minggir	Sleman	D.I. Yogyakarta
98	T	MSP0191	Mariyo	Kalitekuk	Semin	Gunung Kidul	D.I. Yogyakarta
99	T	MSP0192	Gimo	Kelitekuk	Semin	Gunung Kidul	D.I. Yogyakarta
100	T	PBP1340	Sukadi	Umbul Harjo	Cangkringan	Sleman	D.I. Yogyakarta
101	T	PBPp1391	Parjono	Harjobinangun	Pakem	Sleman	D.I. Yogyakarta
102	T	PBP1470	Suharyana	Banyurata	Nanggulan	Kulonprogo	D.I. Yogyakarta
103	T	PbBP544	Pairan	Wukir Harjo	Prambanan	Sleman	D.I. Yogyakarta
104	T	PBP1637	Widodo	Ge Rbosari	Samigaluh	Kulon Progo	D.I. Yogyakarta
105	T	LHP0050	Saleh	Jorok	Unter Iwes	Sumbawa	Nusa Tenggara Barat
106	T	LHP0055	Abdullah M Nur	Brangbiji	Sumbawa	Sumbawa	Nusa Tenggara Barat
107	T	LHP0066	Lalu Gede Sukrin	Semamung	Moyo Hulu	Sumbawa	Nusa Tenggara Barat
108	T	PAP0240	Supardi	Prode	Sumbawa	Sumbawa	Nusa Tenggara Barat
109	T	SGP0550	Multazam	Barebali	Pringgarata	Lombok Tengah	Nusa Tenggara Barat

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110	T	SGP0556	Alamsyah	Kopang Rembige	Kopang	Lombok Tengah	Nusa Tenggara Barat
111	T	SGP0565	Limsah	Pringgesela	Pringgesela	Lombok Timur	Nusa Tenggara Barat
112	T	SGP0574	Mahsun	Pringgesela	Pringgesela	Lombok Timur	Nusa Tenggara Barat
113	T	SGP0627	Rifa Rusmayanti	Suradadi	Terara	Lombok Timur	Nusa Tenggara Barat
114	T	SGP0635	Subhan	Batu Nyala	Praya Tengah	Lombok Tengah	Nusa Tenggara Barat

**Addition Households Interview**

No.	List of randomly selected households.						
No.	Mol <sup>1</sup>	Plant Code	Householder Name	Location			
				Village	Sub-district	District	Province
1	T	RNP0420	La Daru	Maccirinna	Patampanua	Pinrang	South Sulawesi
2	T	RNP0425	Abd Kadir	Maccirinna	Patampanua	Pinrang	South Sulawesi
3	T	NGP1519	Reni Mujani	Waturejo	Ngantang	Malang	East Java
4	T	NGP1520	Siswoyo	Pagersari	Ngantang	Malang	East Java
5	T	NGP1527	Juwanah	Pagersari	Ngantang	Malang	East Java
6	T	SGP0545	Dwi Amang Supianto	Batu Mekar	Lingsar	Lombok Barat	Nusa Tenggara Barat
7	T	SGP0595	H. Sulaiman	Dasan Geres	Gerung	Lombok Barat	Nusa Tenggara Barat
8	T	KKP0197	Pdt.Jooy Wuisan	Watu Puda	Umalulu	Sumba Timur	Nusa Tenggara Timur
9	T	TKP0129	Narto	Rogomulyo	Kaliwungu	Semarang	Central Java
10	T	TKP0166	Paryono	Rogomulyo	Kaliwungu	Semarang	Central Java
11	T	MSP0203	Sumardiyanto	Selopamioro	Imogiri	Bantul	D.I. Yogyakarta

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12	T	MSP0219	Andre permana	Selopamioro	Imogiri	Bantul	D.I. Yogyakarta
13	T	MSP0225	Supriyono	Selopamioro	Imogiri	Bantul	D.I. Yogyakarta
14	T	PBP1302	Wiyono	Selopamioro	Imogiri	Bantul	D.I. Yogyakarta

**C.3. Sampling approach**

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 31/12/2020 is 4,636 units.

Using the link <http://www.raosoft.com/samplesize.html> to calculate the sample size, 96 households will be sufficient to obtain a confidence level of 90 with 10% margin error.

The households are randomly selected using a sampling generator at the link <https://www.graphpad.com/quickcalcs/randomselect1/> for conservativeness.

For conservativeness, the verification team has selected a sample size of 190 for households from the clusters in the different villages, different districts & different provinces for onsite and telephone interviews to obtain more information of the project implementation and monitoring of the SDG indicators. 128 households were reached out of which 20 visited onsite and 108 telephone interviews.

Therefore, the sample size is representative and exceeds the proposed sample size of 96 households.

From the results of the 128 interviewed households, it could be confirmed the following:

1. Family size and members
2. Type and number of animals
3. Any usage of firewood and LPG
4. Any usage of Bio-slurry
5. Bio-slurry usage for what purposes
6. Do you sell bio-slurry
7. Do you compost the bio-slurry
8. Do you have time saved from collecting firewood with the digester
9. Do you used the saved time for other activities
10. Any training provided by CPO and mason
11. What is the main problem with the digester
12. Is the CPO, mason and YRE personnel can be contacted

A summary of interview questions and feedback received are presented in the below table:

Questions for households during telephone interviews	Summary of feedback
How many family members	The average family members of the interviewed households are 4
Type of animals	Out of the 128 households, 116 households have cows and 12 households have pigs.
Bio-slurry usage and any composting	Interview households informed bio-slurry apply to vegetable garden or rice fields or fruit trees around the house compound.

Questions for households during telephone interviews	Summary of feedback
	<p>The households are happy that using the bio-slurry has increased crop yield and brings significant financial savings due to the reduction in use of chemical fertilizers.</p> <p>Some of the households apply the bio-slurry directly to the fields and some kept in the bio-slurry huts / pits before taken for application in the fields.</p> <p>Households expressed that the bio-slurry does not produce unpleasant odour as compared to fresh dung since it has been processed in the biodigesters</p> <p>Some of them sell to neighbours who does not have a digester.</p>
Are you using firewood or LPG	<p>The interviewed households inform sufficient biogas for their daily cooking of 2 meals. Firewood will be used to boil water for milking or festive and when large family gathering.</p> <p>LPG is use as standby and supplement fuel.</p>
How much time saved for collecting firewood	The interviewed households informed with the digester they spend less time to collect firewood.
What other activities you do with the saved time	The interviewed households informed that they have time for other activities such as plant flowers, sell vegetables with the save time.
Are training provided by the masons or CPO?	<p>After commissioning, training is provide in feeding dung to the digester, wash the mixing unit and remove bio-slurry for the discharge compartment.</p> <p>Cleaning of gas stove and removal of water in the gas pipe.</p>
Any complaint and feedback	Interviewed householders informed no complaints. They know how to contact the masons, CPO and VPA implementer.

### Interview of Masons

Questions during telephone interview	Summary of feedback
Do you received training in constructing digester	VPA implementer supervisors and CPO provide guidance in constructing digester, usage of bio-slurry and stove modification.
Is constructing digester you main income	Besides constructing digester, we are farmers
How much do you earn in constructing digester	We could earn 1million IDR to 3million IDR per unit and could construct 2 units per month
Any complaint and feedback received.	Householders usually call to obtain information on gas stove cleaning and water in gas pipeline.

### Interview of CPOs

Questions during telephone interview	Summary of feedback
How many masons working for you.	Interviewed CPOs have number of masons range from 2 to 10 depends on the location.
Any training provided to masons and householders	<p>Masons are trained under VPA implementer program</p> <p>Householders will be trained normally 2 months after construction completed.</p>
How much do you earn in constructing digester	We could earn 1million IDR to 3million IDR per unit and could construct 3 units per month. Sometime are more depends on the period.

Questions during telephone interview	Summary of feedback
Any complaint and feedback received.	Complaints or feedback normally received by call or WhatsApp. The supervisor will be informed to handle the feedback or complaint or repairs required.

**C.4.** Clarification requests, corrective action requests and forward action requests raised

Verification Topics	No. of CAR	No. of CL	No. of FAR
A: Description of project activity A.1. General description of project A.2. Location of project A.3. Reference of applied methodology A.4. Crediting period of project	1	1	0
B: Project Implementation B.1: Description of implemented project B.1.1. Forward Action Requests B.2: Post-registration changes B.2.1. Temporary deviations from the approved Monitoring & Reporting Plan, methodology or standardized baseline B.2.2. Corrections B.2.3. Changes to start date of crediting period B.2.4. Permanent changes from the Design Certified monitoring plan, applied methodology or applied standardized baseline B.2.5. Changes to project design of approved project	2	0	0
C: Description of monitoring system applied by the project Article 1: Organisational Setup of the carbon and SDG monitoring Article II. Description of human resources Article III. Survey design Article IV. Biogas user survey (US + CMS) Article V. Survey implementation Article VI. Baseline Fuel Test (BFT) and the Project Performance Field Test (PFT) Article VII. KPT survey design Article VIII. KPT implementation	1	1	0
D: Data and parameters	5	3	0

Verification Topics	No. of CAR	No. of CL	No. of FAR
D.1. Data and parameters fixed ex ante or at renewal of crediting period D.2. Data and parameters monitored D.3. Comparison of monitored parameters with last monitoring period D.4. Implementation of sampling plan			
E: Calculation of SDG outcomes E.1. Calculation of baseline value or estimation of baseline situation of each SDG Impact E.2. Calculation of project value or estimation of project situation of each SDG impact E.3. Calculation of leakage E.4. Calculation of net benefits or direct calculation for each SDG Impact E.5. Comparison of actual SDG Impacts with estimates in approved PDD E.5.1.1. Explanation of calculation of value estimated ex ante calculation of approved PDD for this monitoring period E.6. Remarks on increase in achieved SDG Impacts from estimated value in approved PDD	7	0	0
F: Safeguards Reporting	1	0	0
G. Stakeholder Inputs and Legal Disputes G.1. List all Inputs and Grievances which have been received via the Continuous Input and Grievance Mechanism together with their respective responses / mitigations G.2. Report on any stakeholder mitigations that were agreed to be monitored G.3. Provide details of any legal contest that has arisen with the project during the monitoring period	1	0	0
<b>SUM</b>	<b>18</b>	<b>5</b>	<b>0</b>

## SECTION D. Verification findings

### D.1. General

#### D.1.1. Remaining forward action requests from validation and/or previous verifications

During the validation the validating VVB might have raised issues that could not be closed or resolved during the validation stage. For this purpose, FARs might have been raised. Likewise, FARs might have been raised in the course of previous verifications.



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In the course of this verification, the approved GS4GG transition annex for the PoA and VPA is review. GS review confirmation is consulted. For the current monitoring period the following applies:

(i) Open issues from validation:

<input checked="" type="checkbox"/>	There were no open issues which have been addressed in the latest version of the GS review report.
<input type="checkbox"/>	All open issues from the validation have been appropriately addressed in the context of previous verifications.
<input type="checkbox"/>	All issues related to the validation have been appropriately addressed in the course of the current monitoring period (for details please refer to appendix 4)
<input type="checkbox"/>	The following issues related to the validation have <b>not</b> yet been appropriately addressed (for details please refer to appendix 4):
	N/A

(ii) Open issues from previous verifications:

<input type="checkbox"/>	N/A – as this is the first monitoring period for this GS VPA.
<input checked="" type="checkbox"/>	There were no open issues which have been addressed in the previous verification report
<input type="checkbox"/>	All issues related to the previous verification have been appropriately addressed in the course of the current monitoring period (for details please refer to appendix 4)
<input type="checkbox"/>	The following issues related to the previous verification have <b>not</b> yet been appropriately addressed (for details please refer to appendix 4):
	N/A

## D.2. Programme of activities

### D.2.1. Compliance of the programme implementation with the registered programme design document

<b>Means of verification</b>	<p>By means of an in-depth review of the approved GS4GG Transition Annex provided by CME / VPA Implementer carried out during desk review whether the project has been implemented and operated in line with GS4GG approved Transition Annex and the latest approved VPA-DD, and whether all physical features of the project are in place. The implemented technology, project design as well as monitoring was reviewed.</p> <p>Further checked if relevant technical equipment of the project activity during the monitoring period and consistent notations of key equipment (biodigester type) in Transition Annex for PoA &amp; VPA, MR and ER calculation spreadsheet are applied.</p> <p>Interviews households, VPA implementer personnel have been carried out, data records, survey records, biodigester specifications were checked in this context.</p> <p>During this monitoring period there is addition of new design made from polyethylene for smaller capacity of 1 to 3m<sup>3</sup>.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"><li>• /TA/</li><li>• /MR/</li><li>• /VPADD/</li><li>• /PoADD/</li><li>• /TD/</li><li>• /DC/</li><li>• /GS4GG/</li><li>• /GSM/</li><li>• /ER/</li><li>• /IPCC/</li><li>• /IM/</li></ul>
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<b>Findings</b>	<input checked="" type="checkbox"/>	The project has been implemented as described in the latest version of the Transition Annex as well as in section B.1 of the monitoring report. No deviations thereof have been identified in the course of this verification.
	<input checked="" type="checkbox"/>	The following deviations from the registered project design and or the project description in the MR have been identified in the course of this verification (for further details please refer to section C.3.2 and C.3.6):
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs have been raised: CAR B.1-1
<b>Conclusion</b>	<input type="checkbox"/>	No CARs / CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	The raised CARs / CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.
		<p>During this verification, onsite and remote assessment is carried out. The reviewed project documentation to confirm w.r.t. the realized technology, the project design, as well as the monitoring and data collection. The VPA has been implemented and operated as described in the GS4GG approved Transition Annex and approved revised VPA-DD.</p> <p>With minor correction and based on the documents review of design change, site inspection and telephone interviews it is conclude that there were new digester capacities added.</p>

### D.2.2. Implementation and operation of the management system

<b>Means of verification</b>		<p>The verification team conducted a review of the Transition Annex, approved revised VPA-DD to check related information against observations during onsite and telephone interviews of sampled households.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /TA/</li> <li>• /DC/</li> <li>• /VPA-DD/</li> <li>• /LHHs/</li> </ul>
<b>Findings</b>	<input checked="" type="checkbox"/>	The project management system has been implemented as described in the latest version of the PoA-DD as well as in section B.1 of the monitoring report. No deviations thereof have been identified in the course of this verification.
	<input type="checkbox"/>	The following deviations from the registered project design and or the project description in the MR have been identified in the course of this verification (for further details please refer to section E.4): N/A
	<input type="checkbox"/>	In this context the following CARs, CLs have been raised: -
<b>Conclusion</b>	<input checked="" type="checkbox"/>	No CARs / CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs / CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.
		<p>During this verification an onsite and telephone assessment was carried out. On the basis of reviewed the project documentation it can be confirmed that w.r.t. the realized technology, the project equipment, as well as the monitoring procedures, the PoA has been implemented and operated as described in the approved Transition Annex</p> <p>The PoA is managed by HIVOS as the Coordinating Management Entity. The VPA is managed by Yayasan Rumah Energi YRE).</p> <p>Based on document review and interviews VVB found that the system is in place, appropriate and effective.</p>

**D.2.3. Post-registration changes****D.2.3.1. Temporary deviations from Certified Key Project Information, Project Design Document, Monitoring & Reporting Plan, applied methodology of applied standardise baseline.**

It has been checked whether Temporary deviations from the registered monitoring plan (TDfrMP) or Temporary deviations from monitoring methodology or standardized baseline (TDfMM) have been applied during this monitoring period. The result is summarized in the table below.

<input checked="" type="checkbox"/>	No Temporary deviations from the registered monitoring plan (TDfrMP) or Temporary deviations from monitoring methodology or standardized baseline (TDfMM).have been submitted to the UNFCCC prior to the current monitoring period.									
<input type="checkbox"/>	The following TDfrMP or TDfMM have been approved or are under approval by GS									
	1	<table border="1"> <tr> <td>Title</td> <td></td> </tr> <tr> <td>Status</td> <td><input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.: )</td> </tr> <tr> <td>Appr.date</td> <td></td> </tr> <tr> <td>Ref. No.</td> <td></td> </tr> </table>	Title		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.: )	Appr.date		Ref. No.	
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Title										
Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.: )									
Appr.date										
Ref.No.										
<input checked="" type="checkbox"/>	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									
<input type="checkbox"/>	An approval of the following TDfrMP or TDfMM is to be requested from GS for the current MP.									
	1	Issue:								
	2	Issue:								
<input type="checkbox"/>	The following TDfrMP or TDfMM for which appendix 1 of the PS is applicable have been applied:									
	1	Issue:								
	2	Issue:								

**D.2.3.2. Corrections**

It has been checked whether any corrections to PoA-DD information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	During the verification of the current MP no need for corrections has been identified.	
<input type="checkbox"/>	The following corrections have been applied:	
	1.	Issue:
	2.	Issue:
	3.	Issue:
	PoA-DD has been revised accordingly: (New) version No.: NA Revision date: NA	

	It is confirmed that the updated / 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.	
	<input type="checkbox"/> A related post registration change has been submitted to GS prior to the issuance request.	
	<input type="checkbox"/> A related post registration change is submitted along with this issuance request.	

#### D.2.3.3. Permanent changes from registered monitoring plan, applied methodology, or applied standardized baseline

It has been checked whether any permanent changes from the registered monitoring plan (PCfrMP) or applied methodologies (PCfMM) including standardized baselines (PCfSB) have been approved prior or during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	No PCfrMP, PCfMM or PCfSB have been submitted to GS prior to the current monitoring period		
<input type="checkbox"/>	The following PCfrMP, PCfMM or PCfSB have been approved or are under approval by GS		
	1	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved
		Appr. date	
		Ref. No.	
<input checked="" type="checkbox"/>	During the verification of the current MP no need for a PCfrMP, PCfMM or PCfSB has been identified. The monitoring plan is in accordance with the approved methodology applied by the PoA		
<input type="checkbox"/>	An approval of the following PCfrMP, PCfMM or PCfSB is to be requested from GS for the current MP as appendix 1 of the project standard does not apply.		
	1	Issue:	
	2	Issue:	
<input type="checkbox"/>	The following PCfrMP, PCfMM or PCfSB for which appendix 1 of the PS is applicable have been applied:		
	1	Issue:	
	2	Issue:	

#### D.2.3.4. Changes to project design of approved project

It has been checked whether any changes to the PoA-DD design (CoPD) have been approved prior or during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	No CoPD has been submitted to GS prior to the current monitoring period		
<input type="checkbox"/>	The following CoPD have been approved or are under approval by GS.		
	1	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved
		Appr. date	
		Ref. No.	
	2	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved
		Appr. date	
		Ref. No.	

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<input checked="" type="checkbox"/>	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 PoA	
<input type="checkbox"/>	An approval of the following CoPD is to be requested from GS for the current MP as appendix 1 of the project standard does not apply.	
	1	Issue:
	2	Issue:
<input type="checkbox"/>	The following CoPD for which appendix 1 of the PS is applicable have been applied:	
	1	Issue:
	2	Issue:

**D.3. Voluntary project activities**
**D.3.1. Description of Project Activity**

<b>Means of verification</b>	<p>By means of an in-depth review of the approved Transition Annex and approved revised VPA-DD provided by the VPA Implementer, the checks carried out during documents review the description of the project is describe in Section A 1 of the MR.</p> <p>The implementation of biodigester on 02/01/2017 under the Indonesia Domestic Biogas Programme (IDBP) is a development programme.</p> <p>This monitoring period is the 4<sup>th</sup> Monitoring Period from 01/01/2020 - 31/12/2020 of the 1<sup>st</sup> crediting period running from 02/01/2017 to 01/01/2024 (both dates inclusive)</p> <p>The project is located in Indonesia provinces listed in table 1. The location and GPS of the provinces are crosscheck with the map of Indonesia.</p> <p>The applied methodology as describe in Section A.3 is Technologies and Practices to Displace Decentralized Thermal Energy Consumption (11/04/2011).</p> <p>The VPA is in the 1<sup>st</sup> crediting period from 02/01/2017 to 01/01/2024 (both dates inclusive).</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /TA/</li> <li>• /VPADD/</li> <li>• /PoADD/</li> <li>• /MR/</li> <li>• /GS/</li> <li>• /VR/</li> </ul>	
<b>Findings</b>	<input type="checkbox"/>	The project has been implemented as described in the latest version of the VPA-DD as well as in section B.1 of the monitoring report. No deviations thereof have been identified in the course of this verification.
	<input checked="" type="checkbox"/>	The following deviations from the registered project design and or the project description in the MR have been identified in the course of this verification (for further details please refer to section E.4): N/A
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs have been raised: CL A.2-1, CAR A.1-1
<b>Conclusion</b>	<input type="checkbox"/>	No CARs / CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	The raised CARs / CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.

	The review of project documentation it can be confirmed that w.r.t. the realized project location, monitoring period and crediting period, the VPA is describe in accordance to the Transition Annex after the minor correction.
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## D.3.2. Project Implementation

### D.3.2.1. Description of implemented project

<b>Means of verification</b>	<p>By means of an in-depth review of the approved Transition Annex and VPA-DD provided by the VPA Implementer, the checks carried out during documents review the description of the project is describe in Section A.1 of the MR.</p> <p>The implementation of biodigester on 02/01/2017 under the Indonesia Domestic Biogas Programme (IDBP) is a development programme.</p> <p>This monitoring period is the 4<sup>th</sup> Monitoring Period from 01/01/2020 - 31/12/2020 of the 1<sup>st</sup> crediting period running from 02/01/2017 to 01/01/2024</p> <p>The project is located in Indonesia provinces listed in table 1. The location and GPS of the provinces have been crosschecked with the map of Indonesia.</p> <p>The applied methodology as describe in Section A.3 is Technologies and Practices to Displace Decentralized Thermal Energy Consumption (11/04/2011).</p> <p>The VPA is in the 1<sup>st</sup> crediting period from 02/01/2017 to 01/01/2024.</p> <p>During this monitoring period, new design of polyethylene type material with capacity of 1 to 3m<sup>3</sup> were introduced.</p> <p>As per GS design review approval 2 FARs were raised as below for VVB to verify:</p> <p>FAR # 1: The DOE shall take comments from the stakeholders about the design change or the new type of bio-digester during the next site visit.</p> <p>During the onsite and telephone interviews householders who have installed digester of new design with capacity of 1 and 2m<sup>3</sup> were interviewed to obtain feedback that the system is in good working conditions.</p> <p>FAR # 2: The DOE shall cross-check the end-user agreement clearly stating the new type of biogas digester.</p> <p>5 latest construction agreements describing polyethylene type of 1 to 2 m<sup>3</sup> capacities were verified.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /TA/</li> <li>• /VPADD/</li> <li>• /PoADD/</li> <li>• /MR/</li> <li>• /CA/</li> <li>• /GS4GG/</li> <li>• /VR/</li> <li>• /LHH/</li> </ul>	
<b>Findings</b>	<input checked="" type="checkbox"/>	The project has been implemented as described in the latest version of the VPA-DD as well as in section B.1 of the monitoring report. No deviations thereof have been identified in the course of this verification.
	<input type="checkbox"/>	The following deviations from the registered project design and or the project description in the MR have been identified in the course of this verification (for further details please refer to section E.4):
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs have been raised: CAR A.2-1; CL A.1-1;
<b>Conclusion</b>	<input type="checkbox"/>	No CARs / CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.

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	<input checked="" type="checkbox"/>	The raised CARs / CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.
		The verification is carried out remotely with support from carbon consultant and VPA implementer personnel. The review of project documentation could confirm that w.r.t. the realized technology, the project equipment, as well as the monitoring and survey, the project has been implemented and operated as described in the registered VPA-DD version after relevant corrections.

**D.3.3. Post-registration changes****D.3.3.1. Temporary deviations from Certified Key Project Information, Project Design Document, Monitoring & Reporting Plan, applied methodology of applied standardise baseline.**

It has been checked whether Temporary deviations from the registered monitoring plan (TDfrMP) or Temporary deviations from monitoring methodology or standardized baseline (TDfMM) have been applied during this monitoring period. The result is summarized in the table below.

<input checked="" type="checkbox"/>	No Temporary deviations from the registered monitoring plan (TDfrMP) or Temporary deviations from monitoring methodology or standardized baseline (TDfMM).have been submitted to the GS prior to the current monitoring period.									
<input type="checkbox"/>	The following TDfrMP or TDfMM have been approved or are under approval by GS.									
	1	<table border="1"> <tr> <td>Title</td> <td></td> </tr> <tr> <td>Status</td> <td><input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.: )</td> </tr> <tr> <td>Appr.date</td> <td></td> </tr> <tr> <td>Ref. No.</td> <td></td> </tr> </table>	Title		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.: )	Appr.date		Ref. No.	
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Title										
Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.: )									
Appr.date										
Ref.No.										
<input checked="" type="checkbox"/>	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 VPA									
<input type="checkbox"/>	An approval of the following TDfrMP or TDfMM is to be requested from GS for the current MP as appendix 1 of the project standard does not apply. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.									
	1	Issue:								
	2	Issue:								
<input type="checkbox"/>	The following TDfrMP or TDfMM for which appendix 1 of the PS is applicable have been applied:									
	1	Issue:								
	2	Issue:								

**D.3.3.2. Corrections**

It has been checked whether any corrections to VPA information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	During the verification of the current MP no need for corrections has been identified.
<input type="checkbox"/>	The following corrections have been applied:

	1.	Issue:	
	2.	Issue:	
	The VPA-DD has been revised accordingly: (New) version No.:		
	It is confirmed that the updated / 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.		
	<input type="checkbox"/> A related post registration change has been submitted prior to the issuance request. No related approval numbers and dates are mentioned on the corresponding subpages of the PoA submitted to GS. The related documentation is accessible via:  <input type="checkbox"/> A related post registration change is submitted along with this issuance request. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.		

**D.3.3.3. Changes to start date of crediting period**

<input type="checkbox"/>	N/A - as this is not the first verification within the crediting period
<input checked="" type="checkbox"/>	The PPs do not intend to change the start date of the crediting period.
<input type="checkbox"/>	The approval to change the start date of the crediting period on DD/MM/YYYY

**D.3.3.4. Permanent changes from registered monitoring plan, applied methodology, or applied standardized baseline**

It has been checked whether any permanent changes from the registered monitoring plan (PCfrMP) or applied methodologies (PCfMM) including standardized baselines (PCfSB) have been approved prior or during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	No PCfrMP, PCfMM or PCfSB have been submitted to GS prior to the current monitoring period		
<input type="checkbox"/>	The following PCfrMP, PCfMM or PCfSB have been approved or are under approval by GS		
	1	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved
		Appr.date	
		Ref. No.	
<input checked="" type="checkbox"/>	During the verification of the current MP no need for a PCfrMP, PCfMM or PCfSB has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA		
<input type="checkbox"/>	An approval of the following PCfrMP, PCfMM or PCfSB is to be requested from GS for the current MP as appendix of the project standard does not apply.		
	1	Issue:	
	2	Issue:	
<input type="checkbox"/>	The following PCfrMP, PCfMM or PCfSB for which appendix of the PS is applicable have been applied:		
	1	Issue:	
	2	Issue:	



**D.3.3.5. Changes to design of approved project**

It has been checked whether any changes to the VPA design (CoPD) have been approved prior or during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input type="checkbox"/>	No CoPD has been submitted to the GS to the current monitoring period		
<input checked="" type="checkbox"/>	The following CoPD have been approved or are under approval by GS		
	1	Title	New design for polyethylene material of 1 to 3m <sup>3</sup> capacity.
		Status	<input type="checkbox"/> under approval; <input checked="" type="checkbox"/> approved
		Appr. Date	21/07/2020
		Ref. No.	NA
	2	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved
		Appr. Date	
		Ref. No.	
<input checked="" type="checkbox"/>	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		
<input type="checkbox"/>	An approval of the following CoPD is to be requested from the GS for the current MP as appendix of the project standard does not apply.		
	1	Issue:	
	2	Issue:	
<input type="checkbox"/>	The following CoPD for which appendix of the PS is applicable have been applied:		
	1	Issue:	
	2	Issue:	

**D.3.4. Description of monitoring system applied by the project**

<b>Means of verification</b>	<p>By means of comparison of the MR with applied methodology, Transition Annex and VPA-DD</p> <ul style="list-style-type: none"> <li>(i) applied GS methodology</li> <li>(ii) GS4GG Transition Annex</li> <li>(iii) VPA-DD</li> </ul> <p>Section C of the MR present the organizational structure, manpower, survey design, user survey, survey implementation, respective fuel tests, KPT survey and implementation.</p> <p>The verification team has checked the monitoring system as described if is in compliance with the related requirements of the applied methodology and the VPA-DD monitoring plan.</p> <p>The usage survey is conducted on an annual basis and was conducted in November - December 2020. KPT was conducted in December 2019 with the results are valid for 2 years according to the methodology requirements. Therefore, no KPT survey conducted for this monitoring period.</p> <p>For this user survey conducted for this monitoring 154 households were randomly selected with 123 households interviewed. 31 households have been reported as drop-offs.</p> <p>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 are representative</p>
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## GS-VPA-VCR-FORM

	<p>Interviews conducted remotely with the VPA implementer and survey consultant on the outcome of the survey results.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /TA/</li> <li>• /VPADD/</li> <li>• /GSM/</li> <li>• /BUS/</li> <li>• /IM02/</li> <li>• /IM03/</li> </ul>	
<b>Findings</b>	<input type="checkbox"/>	The MP is completely in accordance with the approved methodology applied by the GS project (registered version of the VPA-DD)
	<input checked="" type="checkbox"/>	<p>In this context the following CARs, CLs, FARs have been raised:</p> <p>CAR C.1-1; CAR C.1-2</p>
<b>Conclusion</b>	<input type="checkbox"/>	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	<p>The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.</p> <p>After appropriate corrections, the verification team can confirm that the monitoring system complies with the approved project monitoring plan and the applied methodology.</p>

### D.3.5. Data and Parameters

#### D.3.5.1. Data and parameters fixed ex ante or at renewal of crediting period

<b>Means of verification</b>	<p>The verification team has checked the ex-ante parameters and data stated in Section D.1 of MR and compared with section A.3 of the Transition Annex and Section D.6.2 of approved revised VPA-DD whether all parameters fixed ex-ante for the crediting period have been applied correctly.</p> <p>The following parameters have been fixed at validation or at renewal of crediting period:</p>				
	No.	SDG Indicator	Parameter	Value	Unit
	1	13	$f_{NRB,y}$	64.8	%
	2	13	NRB	55,984,649	m <sup>3</sup>
	3	13	DRB	30,411,351	m <sup>3</sup>
	4	13	$EF_{b1, bio}$	112	tCO <sub>2</sub> /TJ
	5	13	$EF_{p1, bio}$	112	tCO <sub>2</sub> /TJ
	6	13	$NCV_{bio}$	0.015	TJ/t
	7	13	$EF_{b1, fuel}$	71.9 (Kerosene) 63.1 (LPG)	tCO <sub>2</sub> /TJ
	8	13	$EF_{p1, fuel}$	71.9 (Kerosene) 63.1 (LPG)	tCO <sub>2</sub> /TJ
	9	13	$NCV_{fuel}$	0.0438 (Kerosene) 0.0473 (LPG)	TJ/t
	10	13	$\eta_{biogas\ stove}$	50	%
	11	13	$EF_{awms,T}$	Dairy cows = 31 Other cattle = 1 Buffalo = 2	kg CH <sub>4</sub>

**GS-VPA-VCR-FORM**

			Market swine = 7 Goats = 0.22 Sheep = 0.20 Poultry = 0.02	
	The following sources of information have been used in this context: <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /TA/</li> <li>• /VPADD/</li> <li>• /IPCC/</li> <li>• /IM01/</li> </ul>			
<b>Findings</b>	<input checked="" type="checkbox"/>	The MR and the ER calculation have considered the parameters fixed ex-ante for the crediting period correctly, no deviations have been observed.		
	<input type="checkbox"/>	The following deviations from the parameters fixed ex-ante or at renewal of crediting period have been identified in the course of this verification:		
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: -		
<b>Conclusion</b>	<input checked="" type="checkbox"/>	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.		
	<input type="checkbox"/>	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.		
	The data and parameters listed in the section D.1 of the MR were crosschecked with the applied methodology, Transition Annex and VPA-DD are consistent.			

**D.3.5.2. Data and parameters monitored**

<b>Means of verification</b>	During the verification all relevant monitoring parameters listed in Section C.1 of the approved Transition Annex and Section D.7.1 of approved revised VPA-DD have been verified with regard to the <ul style="list-style-type: none"> <li>(i) appropriateness of the applied measurement / determination method,</li> <li>(ii) the correctness and accuracy of the values applied for ER calculation,</li> <li>(iii) applied QA/QC measures.</li> </ul> The results as well as the verification procedure are described parameter-wise in the project specific verification checklist (Appendix 5). The following sources of information have been used in this context: <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /TA/</li> <li>• /VPADD/</li> <li>• /ER/</li> <li>• /BUS/</li> <li>• /KPT/</li> <li>• /L/</li> <li>• /IM01/</li> </ul>	
<b>Findings</b>	CL D.2-1; CL D.2-2, CL D.2-3; CAR D.2-4; CAR D.2-5; CAR D.2-6; CAR D.2-7;	
<b>Conclusion</b>	<input type="checkbox"/>	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.

	<input checked="" type="checkbox"/>	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.
		After appropriate corrections carried out by the VPA Implementer it could be concluded that all monitoring parameters have been measured / determined without material misstatements and in line with VPA-DD and applied methodology

### D.3.5.3. Comparison of monitored parameters with last monitoring period

<b>Means of verification</b>	Section D.3 of monitoring report describe the comparison of monitored parameters with the last monitoring period are according to the GS4GG and Transition Annex. The SDG parameters are crosschecked with Transition Annex.		
	<b>Data / Parameter</b>	<b>Value obtained in this monitoring period</b>	<b>Value obtained last monitoring period</b>
	SDG 13 Climate action	10,975 tCO <sub>2</sub> e	7,248 tCO <sub>2</sub> e
	GS-03 Soil condition	1,946 households	2,738 households
	GS-06 Quality of employment	63 trainings	58 trainings
	GS-07 Livelihood of the poor	'Worsened': 113 (equivalent to 2.4% of total units in operation)  'The same': 1,318 (equivalent to 28.4% of total units in operation)  'Improved': 3,205 (equivalent to 69.1% of total units in operation)	'Worsened': 145 (equivalent to 3.4% of total units in operation)  'The same': 1,362 (equivalent to 31.9% of total units in operation)  'Improved': 2,757 (equivalent to 64.7% of total units in operation)
	GS-08 Access to affordable and clean energy services	4,636 units in operation	4,264 units in operation
	GS-09 Human and institutional capacity	1,082 women	951 women
	GS-10 Quantitative employment and income generation	144 number of direct jobs created  40 number of constructors  32.19 households sell the bio-slurry (0.7% of total)	124 number of direct jobs created  66 number of constructors  42.64 households sell the bio-slurry (1% of total)
	GS-12 Technology transfer and technological self-reliance	4,408 units	4,074 units
	GS-13 Establishment of sustainable food production area	15.45 ha	33.04 ha
	GS-14 Time saved	60.5% (equivalent to 2,803 women)	46% (equivalent to 1,980 women)
	GS-15 Productive use of time	26.6% (equivalent to 1,234 women)	37% (equivalent to 1,563 women)
	The following sources of information have been used in this context:		
	<ul style="list-style-type: none"> <li>• /MR/</li> <li>• /ER/</li> <li>• /BUS/</li> <li>• /DB/</li> <li>• /TA/</li> </ul>		

	<ul style="list-style-type: none"> <li>• /VPADD/</li> </ul>	
<b>Findings</b>	<input type="checkbox"/>	No errors, omissions, misstatements or incomplete information has been identified.
	<input checked="" type="checkbox"/>	There are identified mistakes.
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CAR D.2-8
<b>Conclusion</b>	<input type="checkbox"/>	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.
	Appropriate actions have been taken it could be concluded that the information are filled correctly.	

#### D.3.5.4. Implementation of sampling plan

<b>Means of verification</b>	<p>Section D.4 of MR describes the sampling plan implemented by VPA implementer and CME.</p> <p>The sampling plan of this VPA adopted the Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities' EB 69, Annex 4.</p> <p>Multi-stage sampling applied, where clusters consisted of geographical areas and subunits. It is considered more cost-effective to treat several respondents within a local area as a cluster.</p> <p>The verification team has been checked the sampling approach to determine the monitored values is according to the requirements set forth in the methodology, the sample size selected following at least a 90% confidence interval and a 10% margin of error (90/10), where applicable.</p> <p>Further it has been checked whether the VPA Implementer has correctly applied the implemented sampling plan including</p> <ul style="list-style-type: none"> <li>(i) description of the implemented sampling design</li> <li>(ii) collected data</li> <li>(iii) analysis of collected data</li> <li>(iv) demonstration on whether the required confidence/precision has been met.</li> </ul> <p>The sampling plan is according to the Transition Annex and VPA-DD.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /BUS/</li> <li>• /TA/</li> <li>• /ER/</li> <li>• /VPADD/</li> <li>• /DB/</li> <li>• /IM01/</li> <li>• /IM02/</li> </ul>	
<b>Findings</b>	<input type="checkbox"/>	The VPA Implementer has not applied sampling approaches for the survey
	<input checked="" type="checkbox"/>	The VPA Implementer has applied sampling approaches for the survey.
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:
<b>Conclusion</b>	<input checked="" type="checkbox"/>	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.

	<input type="checkbox"/>	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.
		The VPA Implementer has applied appropriate sampling method.

### D.3.6. Calculation of SDG outcomes

#### D.3.6.1. Calculation of baseline value or estimation of baseline situation of each SDG Impact

<b>Means of verification</b>	During the verification, the determination of the baseline situation has been determined according to the GS4GG.		
	The SDG requirements as describe in the Transition Annex.		
	<b>SDG Indicator</b>	<b>GS Indicator</b>	<b>Baseline situation</b>
	SDG13: Climate action The cumulative ex-ante emission reductions	Climate change	25,491 tCO <sub>2</sub> e
	SDG 7: Affordable and Clean Energy	GS-08 Access to affordable and clean energy services	No biodigester installed LPG, kerosene and biomass are used
		GS-12 Technology transfer and technological self-reliance	No training and transfer of technology
	SDG 5: Gender Equality	GS-09 Human and institutional capacity	No development for women.
		GS-14 Time saved	No time-savings for women.
		GS-15 Productive use of time	No productive use of time for women
	SDG 2: No Hunger	GS-03 Soil condition	No slurry used for farming and agricultural activities.
		GS-13 Establishment of sustainable food production area	No slurry used for agricultural land (in terms of area).
	SDG 1: No Poverty	GS-06 Quality of employment	No training and employment opportunities
		GS-07 Livelihood of the poor	Livelihood remains unchanged
		GS-10 Quantitative employment and income generation	No training and employment opportunities
	The following sources of information have been used in this context:		
	<ul style="list-style-type: none"> <li>• /MR/</li> <li>• /ER/</li> <li>• /BUS/</li> <li>• /KPT/</li> <li>• /DB/</li> <li>• /TA/</li> <li>• /VPADD/</li> <li>• /GSM/</li> </ul>		
<b>Findings</b>	<input type="checkbox"/>	The baseline situation found compliant with the Transition Annex and VPA-DD	

		No errors, omissions, misstatements or incomplete information has been identified.
	<input checked="" type="checkbox"/>	The verification team has identified mistakes in the baseline emissions calculation or the underlying calculation approaches.
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CAR E.1-1
<b>Conclusion</b>	<input type="checkbox"/>	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.
		With appropriate corrections, it could conclude the baselines values have been estimated in accordance to SDG requirements as correct and the emissions are conservatively determined.

### D.3.6.2. Calculation of project value or estimation of project situation of each SDG impact

<b>Means of verification</b>	Section E.2 of the MR is review for the project value and estimation of project situation for each SDG outcome according to the Transition Annex and approved revised VPA-DD		
	<b>SDG Indicator</b>	<b>GS Indicator</b>	<b>Project situation</b>
	SDG13: Climate action The cumulative ex-post emission reductions	Climate Change	14,438 tCO <sub>2</sub> e.
	SDG 7: Affordable and Clean Energy	GS-08 Access to affordable and clean energy services	4,636 biodigesters installed
		GS-12 Technology transfer and technological self-reliance	4,408 users attended training.
	SDG 5: Gender Equality	GS-09 Human and institutional capacity	1,082 women attend Operation and Maintenance training.
		GS-14 Time saved	2,803 women reported to have saved time.
		GS-15 Productive use of time	1,234 women reported to have more time for productive use.
	SDG 2: No Hunger	GS-03 Soil condition	1,946 households use bio-slurry on land
		GS-13 Establishment of sustainable food production area	15.45 hectares applying bio-slurry
	SDG 1: No Poverty	GS-06 Quality of employment	63 vocational trainings conducted
		GS-07 Livelihood of the poor	'Worsened': 113 (equivalent to 2.4% of total units in operation)  'The same': 1,318 (equivalent to 28.4% of total units in operation)  'Improved': 3,205 (equivalent to 69.1% of total units in operation)
		GS-10 Quantitative employment and income generation	144 number of direct jobs created

40 number of constructors  
32.19 households sell the bio-slurry (0.7% of total)

SDG 13: The emissions reductions achieved for this monitoring period is calculated as:

The emission reduction for one household is calculated for this monitoring period as follows:

1. Emission reductions from fuel switch.

$$\begin{aligned} ER_{CO_2,y} &= BE_{b1,CO_2,y} - PE_{p1,CO_2,y} - LE_{p1,CO_2,y} \\ &= 1.591 - 0.936 - 0.019 \\ &= \mathbf{0.637 \text{ tCO}_2\text{e/y/hh}} \end{aligned}$$

2. Emission reductions from waste management including bio-slurry.

$$\begin{aligned} ER_{CH_4,y} &= BE_{b1,CH_4,y} - PE_{p1,CH_4,y} - PE_{p1 \text{ bio-slurry}} - LE_{p1,CH_4,y} \\ &= 4.528 - 2.490 - 0.040 - 0 \\ &= \mathbf{1.998 \text{ tCO}_2\text{e/y/hh}} \end{aligned}$$

Thus ER for each household for this monitoring period:

$$\begin{aligned} ER_{Total} &= ER_{CO_2,y} + ER_{CH_4,y} \\ &= 0.637 + 1.998 \\ &= \mathbf{2.635 \text{ tCO}_2\text{e/y/hh. (Rounded down to next integral)}} \end{aligned}$$

Therefore, the cumulative emission reductions for CPII MR3 for this monitoring period are determined as below:

$$\begin{aligned} ER_{Total} &= (ER_{CO_2,y} + ER_{CH_4,y}) * N_{p1,y} * U_{p1,y} \\ &= \mathbf{10,975 \text{ tCO}_2\text{e}} \end{aligned}$$

The project emissions are contributed from:

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

The equation applied:

$$PE_{p1,CO_2,y} = \sum (BB_{p1,fuel} * NCV_{fuel} * EF_{p1,fuel}) + (BB_{p1,bio} * NCV_{bio} * EF_{p1,fuel} * f_{NRB})$$

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

Project emission for this situation is **0.936 tCO<sub>2</sub>e/y/hh**.

2. Leakage emissions for fuel used: **0.019 tCO<sub>2</sub>e/y/hh**.

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

The equation applied:

$$PE_{p1,CH_4,y} = GWP_{CH_4} * \sum (N_{T,h,y} * EF_{awms,T}) * PL_y + \sum (N_{T,h,y} * EF_{awms,T}) * (1 - \eta_{new \text{ stove}}) * (1 - PL_y) + PE_{awms,NT}$$

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 consider 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 **2.490 tCO<sub>2</sub>e/y/hh**.

4. Emissions from bio-slurry:



		<p>In the ER spreadsheet, the VPA Implementer has demonstrated the steps for the calculating the emissions for bio-slurry. The data applied in the calculation are derived from:</p> <p>2006 IPCC default value for animal excretion amount, MCF and methane potential;</p> <p>The average head count of animals type are based on the usage survey results;</p> <p>The digester efficiency is based on the study report and IPCC data;</p> <p>The calculated emission for bio-slurry is <b>0.040 tCO<sub>2</sub>e/y/hh</b>.</p> <p>For this monitoring period, the number digester installed is 4,636 units. The average thermal energy per unit is 1.56 kW<sub>th</sub>. The total thermal capacity is 7.22 MW<sub>th</sub> and far below the thermal capacity threshold for type I of 45MW<sub>th</sub>.</p> <p>The emissions for type III activities for this monitoring period is 9,261 tCO<sub>2</sub>e which is lower than 60,000 tCO<sub>2</sub>e/year.</p> <p>In this aspect, the VPA remains within the small-scale threshold for Type I and Type III activities.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /TA/</li> <li>• /BUS/</li> <li>• /VPADD/</li> <li>• /ER/</li> <li>• /GSM/</li> </ul>
Findings	<input type="checkbox"/>	<p>The baseline situation found compliant with the Transition Annex and VPA-DD</p> <p>No errors, omissions, misstatements or incomplete information has been identified.</p>
	<input checked="" type="checkbox"/>	<p>The verification team has identified several mistakes in the project situation.</p>
	<input checked="" type="checkbox"/>	<p>In this context the following CARs, CLs, FARs have been raised:</p> <p>CL D.2-1; CL D.2-2, CL D.2-3; CAR D.2-4; CAR D.2-5; CAR D.2-6; CAR D.2-7; CAR E.2-1</p>
Conclusion	<input type="checkbox"/>	<p>No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.</p>
	<input checked="" type="checkbox"/>	<p>The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.</p>
		<p>After corrections, the calculations of project GHG emissions and SDG outcome are in accordance with the approved Transition Annex, applied methodology and registered VPA-DD.</p>

#### D.3.6.3. Calculation of leakage

Means of verification	<p>Section E.3 of the MR is review for the leakage emissions of project situation. The leakage is the usage of non-renewable biomass and fossil fuel.</p> <p>The VPA Implementer has applied the results of the leakage survey conducted in 2019 for this monitoring period.</p> <p>The calculated value is <b>0.019 tCO<sub>2</sub>e/y/hh</b></p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /ER/</li> <li>• /L/</li> <li>• /VPADD/</li> </ul>
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	• /GSM/	
<b>Findings</b>	<input type="checkbox"/>	No leakage emissions were to be considered (LE = 0).
	<input checked="" type="checkbox"/>	Mistakes are identified
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CAR E.3-1
<b>Conclusion</b>	<input type="checkbox"/>	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.
	After appropriate corrections, the leakage is considered correct.	

#### D.3.6.4. Calculation of net benefits or direct calculation for each SDG Impact

<b>Means of verification</b>	During the verification, Section E.4 of the MR is review for the respective SDGs listed are according to the Transition Annex for the outcome for this monitoring period.				
	<b>SDG</b>	<b>Indicator</b>	<b>Baseline</b>	<b>Project</b>	<b>Net difference</b>
	SDG13: Climate action	Climate change	25,491 tCO <sub>2</sub> e	14,438 tCO <sub>2</sub> e	10,975 tCO <sub>2</sub> e
	SDG 7: Affordable and Clean Energy	GS-08 Access to affordable and clean energy services	No access to biodigester	4,636 biodigester installed.	4,636 biodigester installed.
		GS-12 Technology transfer and technological self-reliance	No training opportunities and transfer of technology	4,408 users trained.	4,408 users trained
	SDG 5: Gender Equality	GS-09 Human and institutional capacity	No development for women.	1,082 women received training	1,082 women received training
		GS-14 Time saved	No timesaving for women	2,803 women reported to have saved time.	2,803 women reported to have saved time.
		GS-15 Productive use of time	No productive use of time for women	1,234 women reported to have more time for productive use.	1,234 women reported to have more time for productive use.
	SDG 2: No Hunger	GS-03 Soil condition	No slurry used for farming and agricultural activities.	1,946 households apply bio-slurry	1,946 households apply bio-slurry
		GS-13 Establishment of sustainable food production area	No slurry used for agricultural land (in terms of area).	15.45 hectares applying bio-slurry	15.45 hectares applying bio-slurry
	SDG 1: No Poverty	GS-06 Quality of employment	No training and employment opportunities	63 vocational trainings conducted	63 vocational trainings conducted

	GS-07 Livelihood of the poor	Livelihood remains unchanged	'Worsened': 113 (equivalent to 2.4% of total units in operation)  'The same': 1,318 (equivalent to 28.4% of total units in operation)  'Improved': 3,205 (equivalent to 69.1% of total units in operation)	'Worsened': 113 (equivalent to 2.4% of total units in operation)  'The same': 1,318 (equivalent to 28.4% of total units in operation)  'Improved': 3,205 (equivalent to 69.1% of total units in operation)
	GS-10 Quantitative employment and income generation	No training and employment opportunities	144 number of direct jobs created  40 number of constructors  32.19 households sell the bio-slurry (0.7% of total)	144 number of direct jobs created  40 number of constructors  32.19 households sell the bio-slurry (0.7% of total)

SDG 13: The emissions reductions achieved for this monitoring period is calculated as:

$$= 10,975 \text{ tCO}_2\text{e}$$

The emission reduction for one household is calculated for this monitoring period as follows:

1. Emission reductions from fuel switch.

$$\begin{aligned}
 ER_{\text{CO}_2,y} &= BE_{b1,\text{CO}_2,y} - PE_{p1,\text{CO}_2,y} - LE_{p1,\text{CO}_2,y} \\
 &= 1.591 - 0.936 - 0.019 \\
 &= 0.637 \text{ tCO}_2\text{e/y/hh}
 \end{aligned}$$

2. Emission reductions from waste management including bio-slurry.

$$\begin{aligned}
 ER_{\text{CH}_4,y} &= BE_{b1,\text{CH}_4,y} - PE_{p1,\text{CH}_4,y} - PE_{p1 \text{ bio-slurry}} - LE_{p1,\text{CH}_4,y} \\
 &= 4.528 - 2.490 - 0.040 - 0 \\
 &= 1.998 \text{ tCO}_2\text{e/y/hh}
 \end{aligned}$$

Thus the ER for each household for this monitoring period:

$$\begin{aligned}
 ER_{\text{Total}} &= ER_{\text{CO}_2,y} + ER_{\text{CH}_4,y} \\
 &= 0.637 + 1.998 \\
 &= 2.635 \text{ tCO}_2\text{e/y/hh. (Rounded down to next integral)}
 \end{aligned}$$

Therefore, the cumulative emission reductions for CPII MR2 for this monitoring period are determined as below:

$$\begin{aligned}
 ER_{\text{Total}} &= (ER_{\text{CO}_2,y} + ER_{\text{CH}_4,y}) * N_{p1,y} * U_{p1,y} \\
 &= 10,975 \text{ tCO}_2\text{e}
 \end{aligned}$$

For this monitoring period, the number digester installed is 4,636 units. The average thermal energy per unit is 1.55 kW<sub>th</sub>. The total thermal capacity is 7.18 kW<sub>th</sub> and below the thermal capacity threshold of 45MW<sub>th</sub>.

The emissions for type III activities for this monitoring period is 9,261 tCO<sub>2</sub>e which is lower than 60,000 tCO<sub>2</sub>e/year

	<p>In this aspect, the VPA remains within the small-scale threshold for Type I and Type III activities.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /ER/</li> </ul>	
<b>Findings</b>	<input type="checkbox"/>	<p>The determination of the SDG outcomes are compliant with the Transition Annex.</p> <p>The calculations of emissions reductions have been carried out in accordance with the formulae and methods described in the registered monitoring plan and the applied methodology. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors and other reference values have been correctly applied.</p> <p>No errors, miscalculations, omissions, misstatements or incomplete information have been identified.</p>
	<input checked="" type="checkbox"/>	During the verification, issues with impact on the ER calculation have been identified.
	<input checked="" type="checkbox"/>	<p>The following are identified in the course of this verification:</p> <p>CL D.2-1; CL D.2-2, CL D.2-3; CAR D.2-4; CAR D.2-5; CAR D.2-6; CAR D.2-7;</p>
<b>Conclusion</b>	<input type="checkbox"/>	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	<p>The raised CARs / CLs / FARs have been addressed appropriately.</p> <p>The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.</p>
	After appropriate corrections, the SDG benefits and emissions reductions are considered correct.	

#### D.3.6.5. Comparison of actual SDG Impacts with estimates in approved PDD

<b>Means of verification</b>	<p>The verification team has checked the MR Section E.5 includes a comparison of actual values of the monitoring period with the estimations in the registered GSPDD and Transition Annex for the respective SDG indicators.</p> <p>The table demonstrate the actual value of each SDG result derived from records provided by VPA implementer.</p>		
	SDG	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period
	SDG 13: Climate action	27,311 tCO <sub>2</sub> e	10,975 tCO <sub>2</sub> e
	SDG 7: Affordable and Clean Energy	No access to biodigester. (GS-08)	4,636 biodigester installed.
		No training opportunities and transfer of technology (GS-08)	4,408 users attending training.
	SDG 5: Gender Equality	No development for women to undertake activities (GS-09)	1,082 women attend the Operation and Maintenance training.
		No time savings as time spend having to collect biomass (GS-09)	2,803 women reporting to have saved time.
		No productive use of time to pursue income generating activities (GS-09)	1,234 women reporting to have more time for productive use.
	SDG 2: No Hunger	No slurry is used as fertiliser on agricultural	1,946 households use bio-slurry on land

**GS-VPA-VCR-FORM**

		land (in terms of number of farmers) (GS-03)	
		No slurry is used as fertiliser on agricultural land (in terms of area) (GS-03)	15.45 hectares applying bio-slurry, per month
	SDG 1: No Poverty	No training and employment opportunities (GS-06)	63 vocational trainings
		Livelihood of the poor is unchanged (GS-07)	'Worsened': 113 (equivalent to 2.4% of total units in operation) 'The same': 1,318 (equivalent to 28.4% of total units in operation) 'Improved': 3,205 (equivalent to 69.1% of total units in operation)
		No training and employment opportunities (GS-06)	144 number of direct jobs created 40 number of constructors 32.19 households sell the bio-slurry (0.7% of total)
<p>The ex-post ERs for this monitoring period is lower than ex-ante</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /ER/</li> <li>• /VPADD/</li> <li>• /TA/</li> <li>• /GS4GG/</li> </ul>			
<b>Findings</b>	<input checked="" type="checkbox"/>	Case 1: The ex-ante estimated value was found to be proportionally higher than the ex-post determined value. No further action is deemed required.	
	<input type="checkbox"/>	Case 2: The ex-ante estimated value fits very good to the actually monitored value. No further justification is deemed required.	
	<input type="checkbox"/>	Case 3: The ex-ante estimated value was found to be proportionally lower than the ex-post determined value.	
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CL D.2-1; CL D.2-2; CL D.2-3; CAR D.2-4; CAR D.2-5; CAR D.2-6; CAR D.2-7; CAR E.6-1	
<b>Conclusion</b>	<input type="checkbox"/>	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.	
	<input checked="" type="checkbox"/>	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.	
	After correction, the section is filled appropriately. The ex-ante value is proportionally higher than the ex-post determined value.		

**D.3.6.6. Explanation of calculation of value estimated ex ante calculation of approved PDD for this monitoring period**

<b>Means of verification</b>	Section E.5.1 describe the estimated ex-ante calculation in accordance with the approved revised VPA-DD and Transition Annex.
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**GS-VPA-VCR-FORM**

	<p>The verification team has compared the calculated ex-ante values for BE, PE and L against the registered VPA-DD and Transition Annex.</p> <p>The table below demonstrate the ex-ante value ER per household per year.</p> <table border="1"> <thead> <tr> <th>Scenario</th> <th>BE (tCO<sub>2e</sub>)</th> <th>PE (tCO<sub>2e</sub>)</th> <th>LE (tCO<sub>2e</sub>)</th> <th>ER (tCO<sub>2e</sub>)</th> </tr> </thead> <tbody> <tr> <td>Biomass and fossil fuel substitution</td> <td>1.720</td> <td>0.557</td> <td>0.058</td> <td><b>1.104</b></td> </tr> <tr> <td>Methane avoidance</td> <td>3.464</td> <td>1.905</td> <td>-</td> <td><b>1.559</b></td> </tr> <tr> <td>Total</td> <td>5.36</td> <td>2.40</td> <td>0.074</td> <td><b>2.663</b></td> </tr> </tbody> </table> <p>The VPA implementer has demonstrate the ex-ante and ex-post threshold to ensure the VPA remains as small-scale.</p> <table border="1"> <thead> <tr> <th>Type</th> <th>01/01/2020 to 31/12/2020</th> </tr> </thead> <tbody> <tr> <td>Ex-ante</td> <td></td> </tr> <tr> <td>    Type I (45 MW<sub>th</sub>)</td> <td>39.2 MW<sub>th</sub></td> </tr> <tr> <td>    Type III (60,000 tCO<sub>2e</sub>)</td> <td>30,000 tCO<sub>2e</sub></td> </tr> <tr> <td>Ex-post</td> <td></td> </tr> <tr> <td>    Type I (45 MW<sub>th</sub>)</td> <td>7.22 MW<sub>th</sub></td> </tr> <tr> <td>    Type III (60,000 tCO<sub>2e</sub>)</td> <td>9,261 tCO<sub>2e</sub></td> </tr> </tbody> </table> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /ER/</li> <li>• /VPADD/</li> </ul>		Scenario	BE (tCO <sub>2e</sub> )	PE (tCO <sub>2e</sub> )	LE (tCO <sub>2e</sub> )	ER (tCO <sub>2e</sub> )	Biomass and fossil fuel substitution	1.720	0.557	0.058	<b>1.104</b>	Methane avoidance	3.464	1.905	-	<b>1.559</b>	Total	5.36	2.40	0.074	<b>2.663</b>	Type	01/01/2020 to 31/12/2020	Ex-ante		Type I (45 MW <sub>th</sub> )	39.2 MW <sub>th</sub>	Type III (60,000 tCO <sub>2e</sub> )	30,000 tCO <sub>2e</sub>	Ex-post		Type I (45 MW <sub>th</sub> )	7.22 MW <sub>th</sub>	Type III (60,000 tCO <sub>2e</sub> )	9,261 tCO <sub>2e</sub>
	Scenario	BE (tCO <sub>2e</sub> )	PE (tCO <sub>2e</sub> )	LE (tCO <sub>2e</sub> )	ER (tCO <sub>2e</sub> )																															
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<b>Findings</b>	<input type="checkbox"/>	The ex-ante estimated value in accordance to registered VPA-DD																																		
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CAR E.5-2																																		
<b>Conclusion</b>	<input type="checkbox"/>	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.																																		
	<input checked="" type="checkbox"/>	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.																																		
	<p>After correction, the section is filled appropriately.</p> <p>The ex-ante threshold value is in accordance with the registered VPA-DD.</p> <p>The ex-post threshold is below type I and type III requirements.</p>																																			

**D.3.6.7. Remarks on increase in achieved SDG Impacts from estimated value in approved PDD**

<b>Means of verification</b>	Section E.5 of MR has a table of comparison of actual values of the monitoring period with the estimations in the approved revised VPA-DD and Transition Annex.
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**GS-VPA-VCR-FORM**

		SDG	Current MP	PDD estimate	Explanation
		SDG 13	Total emission reduction: 10,975 tCO <sub>2</sub> e	Total emission reduction: 27,311 tCO <sub>2</sub> e	The ex-post is lower by 59.8%. The VPA is still in implementation
		SDG 7: Affordable and Clean Energy	4.636 biodigester installed.	20,000 biodigester	VPA-2 is still being implemented and has not yet reached its full capacity.
			4,408 users training.	-	VPA-DD developed prior to the GS for Global Goals, no other ex-ante SDG impacts are reported in the approved VPA-DD.
		SDG 5: Gender Equality	1,082 women attended training.	-	Same as above
			2,803 women reported to have saved time.	-	Same as above
			1,234 women reported to have more time for productive use.	-	Same as above
		SDG 2: No Hunger	1,946 households use bio-slurry	-	Same as above
			15.45 hectares applying bio-slurry	-	Same as above
		SDG 1: No Poverty	63 vocational trainings conducted	-	Same as above
			'Worsened': 113 (equivalent to 2.4% of total units in operation) 'The same': 1,318 (equivalent to 28.4% of total units in operation) 'Improved': 3,205 (equivalent to 69.1% of total units in operation)	-	Same as above
			144 number of direct jobs created 40 number of constructors employed 32.19 households sell the bio-slurry (0.7% of total)	-	Same as above
<b>Findings</b>		<input checked="" type="checkbox"/>	No further justification or explanation is deemed required as actual emissions of this MP do not exceed the ex-ante calculated emission reductions		

**GS-VPA-VCR-FORM**

	<input type="checkbox"/>	A related justification in the MR for the higher ex-post as compared to ex-ante.
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CAR E.6-1
<b>Conclusion</b>	<input type="checkbox"/>	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.
After appropriate corrections, it could conclude the ex-post ERs are lower than ex-ante estimation. There are no ex-ante SDG indicators as compared to ex-post for this monitoring in lieu of the addition requirements for GS4GG in the Transition Annex.		

**D.3.7. Safeguards Reporting**

<b>Means of validation</b>	<input checked="" type="checkbox"/>	<p>Section F of MR, Safeguards reporting.</p> <p>There are no safeguarding principles required to be monitored. The PoA-DD, transition annex and VPA-DD were reviewed.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /BUS/</li> <li>• /DB/</li> <li>• /TA/</li> <li>• /PoADD/</li> <li>• /VPADD/</li> <li>• /IM01/</li> <li>• /IM02/</li> </ul>
<b>Findings</b>	<input type="checkbox"/>	Information is sufficient and appropriate.
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CAR F.1.1
<b>Conclusion</b>	<input type="checkbox"/>	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.
After appropriate correction, the verification team could conclude the section is filled appropriately.		

**D.3.8. Stakeholder Inputs and Legal Disputes**

<b>Means of validation</b>	<input checked="" type="checkbox"/>	<p>The verification team has checked Sections G.1 to G.3 of the monitoring report for the current and previous monitoring report on any complaints and issues raised.</p> <p>Section G.1: There are 71 cases reported this monitoring period with 45 resolved outstanding of 26 cases. These cases are mainly broken mixer, broken stove and leakage on pipe.</p> <p>During the onsite and telephone interviews with households, they informed the main issues gas leakage, block gas pipe by water and broken stove. The interviewed households informed they are satisfied with the Constructors Partner Organisation (CPO), mason and VPA implementer's supervisors respond and time to resolve the issues</p> <p>Section G.2: There are no grievance received during the last monitoring period. Therefore, no cases brought forward to this monitoring period.</p> <p>Section G.3: There are no legal contest or dispute that has arisen with the project during the monitoring period.</p>
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		<p>During onsite and telephone interviews, households informed the common issues are mixer handle, blockage in gas pipe and stove lighter</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /BUS/</li> <li>• /DB/</li> <li>• /TA/</li> <li>• /VPADD/</li> <li>• /UF/</li> <li>• /IM01/</li> <li>• /IM02/</li> <li>• /LHH/</li> </ul>
<b>Findings</b>	<input type="checkbox"/>	Information is sufficient and appropriate.
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CAR G.1-1
<b>Conclusion</b>	<input type="checkbox"/>	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 4.
	After appropriate corrections by VPA Implementer the verification team could conclude the section is filled with appropriate information.	

## SECTION E. Internal quality control

Before the submission of the final verification report a technical review of the whole verification procedure was carried out. The technical reviewers are competent GHG auditors being appointed for the scope this project falls under. The technical reviewers are 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 have been confirmed or revised. Furthermore, reporting improvements might have been achieved.

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

After this step the submission for requesting for issuance is conducted.

## SECTION F. Verification opinion

Yayasan Rumah Energi has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 4<sup>th</sup> periodic verification of CPI of the VPA “**Indonesia Domestic Biogas Programme of Activities (IDBP) (ID 1172), VPA-2 (GS 5303)**”, with regard to stimulate the use of biogas systems to replace traditional thermal energy generation methods by making biogas systems affordable and available to households. This verification covers the period from 01/01/2020 to 31/12/2020 (including both days).

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

- all operations of the VPA are implemented and installed as planned and described in the validated VPA-DD.
- the monitoring plan is in accordance with the applied approved GS methodology, i.e., Technologies and Practices to Displace Decentralized Thermal Energy Consumption (11/04/2011).

- the monitoring system is in place, functional and have generated GHG emission reductions.

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

Emission reductions: **10,975 tCO<sub>2</sub>e**

**SECTION G. Certification statement**

As a duly accredited VVB, TÜV NORD CERT confirms that the PoA

**“Indonesia Domestic Biogas Programme of Activities (IDBP) (ID 1172), VPA-2 (GS 5303)”**  
registered under

GS ID.: 5303

has achieved emission reductions in accordance with all applicable requirements for registered GS project activities during the current monitoring period

MP-No.: CPI MR4  
from: 01/01/2020  
to: 31/12/2020  
(including both days) as follows:

Emission reductions: **10,975 tCO<sub>2</sub>e**

Puchong, 29/11/2021




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

## Appendix 1. Abbreviations

Abbreviations	Full texts
CAR	Corrective Action Request
CL	Clarification
VPA	Voluntary Project Activity
VPA-DD	Voluntary Project Activity Design Document
CME	Coordinating Managing Entity
CO <sub>2</sub> eq	Carbon dioxide equivalent
CPO	Construction Partner Organisation
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GS	Gold Standard
IM	Interview
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
MR	Monitoring Report
NTB	Nusa Tenggara Barat
NTT	Nusa Tenggara Timor
PoA	Programme of Activities
PoA-DD	Programme of Activities Design Document
PRC	Post Registration Changes
PS	CDM project standard for project activities
QA/QC	Quality Assurance / Quality Control
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
YRE	Yayasan Rumah Energi

## Appendix 2. Competence of team members and technical reviewers



**Statement of Competence**  
Appointment and authorization according to the procedures  
of the TÜV NORD JICDM Certification Program

**Mr. David Lubanga**


SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification)	2021-10-20
VCS / ISO 14064-2	Senior Assessor Technical Reviewer	2021-10-20

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
3.1	Energy demand
13.2	Manure

251 - Rev. 7, Date: 2016-10-19

251\_201-VAB0-F20\_2019-10-13\_rev7.doc      201-VAB0-F20 rev3 / 2012-10-25



**Statement of Competence**  
Appointment and authorization according to the procedures  
of the TÜV NORD JICDM Certification Program

**Mr. Robert Cheong**

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification)	01/04/2024
VCS ISO14064-2	Senior Assessor (Validation, Verification)	01/04/2021

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. 10, Date: 17/05/2021

128\_201-VAB0-F20\_2021-05-17\_rev10      201-VAB0-F20 rev3 / 2012-10-25

### Appendix 3. Documents reviewed or referenced

No.	Author	Reference	Title	References to the document	Provider
1.	GS	/GSM/	Technologies and Practices to Displace Decentralized Thermal Energy Consumption (11/04/2011)		Other
2	GS	/GS4GG/	Gold Standard for Global Goals Principles & requirements version 1.2		Other
3	UNFCCC	/KP/	Kyoto Protocol (1997)	<a href="http://unfccc.int/kyoto_protocol/items/2830.php">http://unfccc.int/kyoto_protocol/items/2830.php</a>	Other
4	UNFCCC	/MA/	Decision 3/CMP. 1 (Marrakesh – Accords)	<a href="http://cdm.unfccc.int/Reference/COPMOP/index.html">http://cdm.unfccc.int/Reference/COPMOP/index.html</a>	Other
5	UNFCCC	/SS/	Standard for Sampling and Surveys for CDM Project Activities and Programme Of Activities, EB 69, Annex 4		Other
6	IPCC	/IPCC/	Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories:  1. Non-CO2 Stationery Combustion  2. Emissions from Livestock and Manure Management (Chapter 10)  3. 3. IPCC Second Assessment Report – Climate Change 1995: A Report of the Intergovernmental Panel on Climate Change	<a href="http://www.ipcc-nggip.iges.or.jp">www.ipcc-nggip.iges.or.jp</a>	Other
7	VVB	/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)		VVB
8	GS	/DC/	GS Design Change approval dated 21/07/2020		Other
9	YRE	/PoADD/	GS Programme of Activities Design Document for GS PoA project: “Indonesia Domestic Biogas Programme of Activities (IDBP) (ID 1172)” version 5.0, dated 13/12/2013  GS Programme of Activities Design Document for GS PoA project: “Indonesia Domestic Biogas Programme of Activities (IDBP) (ID 1172)” version 7.0, dated 28/05/2018		YRE

10	YRE	/VPADD/	Voluntary Project Activity Design Document for GS VPA-DD: Indonesia Domestic Biogas Programme of Activities (IDBP) (ID 1172), VPA-2 (GS5303), version 1.3 dated 03/07/2017  Voluntary Project Activity Design Document for GS VPA-DD: Indonesia Domestic Biogas Programme of Activities (IDBP) (ID 1172), VPA-2 (GS5303), version 1.4 dated 11/06/2020		YRE
11	YRE	/TA/	Transition Annex version 2.2 dated 22/01/2019  GS approval dated 23/01/2019		YRE
12	YRE	/VAL/	Validation Report for GS project "Indonesia Domestic Biogas Programme of Activities (IDBP) (ID 1172)" version 1.0 dated 03/07/2018		YRE
13	YRE	/MR/	Monitoring Report version 1.0 dated 09/03/2021  Monitoring Report version 1.1 dated 31/05/2021  Monitoring Report version 1.2 dated 29/06/2021  Monitoring Report version 1.3 dated 12/07/2021  Monitoring Report version 1.4 dated 11/10/2021  Monitoring Report version 1.5 dated 15/11/2021  Monitoring Report version 1.6 dated		YRE
14	YRE	/ER/	ER calculation spreadsheet version 01 dated 28/01/2021  ER calculation spreadsheet version 02 dated 31/05/2021  ER calculation spreadsheet version 03 dated 29/06/2021  ER calculation spreadsheet version 04 dated 12/07/2021  ER calculation spreadsheet version 05 dated 11/10/2021  ER calculation spreadsheet version 06 dated 15/11/2021		YRE
15	JRI	/BUS/	Biogas Usage Survey 2020 dated March 2021 version 1 & 2  Biogas Usage Survey Tabulation version 1 and version 2		Others
16	YRE	/DB/	Database for Households version 1 and version 2		YRE

			Database for households version 3 dated 11/10/2021 Data base for households version 4 dated 15/11/2021		
17	YRE	/KPT/	KPT Survey report 2019 KPT December 2019 and December 2017		YRE
18	YRE	/L/	Leakage assessment 2019		YRE
19	YRE	/BBS/	Biogas Baseline Survey Report Dec 2017		YRE
20	YRE	/UF/	User feedback		YRE
21	YRE	/TD/	Technical Design of digesters undated		YRE
22	YRE	/CA/	Construction Agreements for 1m <sub>3</sub> and 2m <sup>3</sup> digester		YRE
23	UPTD	/C/	Calibration Report of weighing scale by UPTD Pengujian dan Sertifikasi Mutu Barang dated 01/08/2019		Others
24	YRE	/QA/	Operation and Maintenance Manual		YRE
25	YRE	/O1/	Biogas as renewable energy theory and development Nepal 2005-07		YRE
26	YRE	/O2/	Indonesian National Standard on LGP Stoves		YRE
27	YRE	/O3/	Kerosene to LP Gas Conversion Programme in Indonesia		YRE
28	YRE	/O4/	Behaviour Analysis of Using the Household Fuel in Bogor 2010		YRE
29	IPCC	/O5/	IPCC Chapter 10 on Livestock emissions		Others
30	YRE	/O6/	Memo Perbaikan Reaktor		YRE
31	GS	/O7/	Gold Standard email communication threshold small-scale biogas VPA		Others
32	GS	/O8/	Monitoring Method for Monitoring Survey; Usage Survey and Leakage assessment with GS undated		Others
33	CME	/REC/	Declaration of No Renewable Energy Certificates dated 01/05/2020		CME
W4bsites					
35		/gs/	<a href="http://www.goldstandard.org/">http://www.goldstandard.org/</a>		Others
36		/unfccc/	<a href="http://cdm.unfccc.int">http://cdm.unfccc.int</a>		Others
37		/ipcc/	<a href="http://www.ipcc-nggip.iges.or.jp">www.ipcc-nggip.iges.or.jp</a>		Others
38		/rs/	<a href="http://www.raosoft.com/samplesize.html">http://www.raosoft.com/samplesize.html</a>		Others

39		/gp/	<a href="https://www.graphpad.com/quickcalcs/randomselect1/">https://www.graphpad.com/quickcalcs/randomselect1/</a>		Others
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## Appendix 4. Clarification requests, corrective action requests and forward action requests

### Remaining FARs from validation and/or previous verification

<b>FAR ID</b>		<b>Section No.</b>		<b>Date:</b>	
<b>Description of FAR</b>					
NA					
<b>Project participant response</b>				<b>Date:</b>	
<b>Documentation provided by project participant</b>					
<input type="checkbox"/> Changes in the MR		Section(s): C		New version No.:	
<input type="checkbox"/> Changes in XLS		Worksheet(s):		New version No.:	
<input type="checkbox"/> Other:					
<b>VVB assessment</b>				<b>Date:</b>	

### CLs from this verification

<b>CL ID</b>	A.2-1	<b>Section no.</b>	A.2	<b>Date:</b>	05/04/2021
<b>Description of CL</b>					
MR version 1.0, Section A.2, table 1: Clarification request on provinces Banten, Sumatera Selatan and Kalimantan Tengah not listed but in Database					
<b>Project participant response</b>				<b>Date:</b>	14/04/2021
Provinces Banten and Sumatera Selatan are included in the West Java province Province Kalimantan Tengah is included in South Sulawesi province Clarifying text has been added below Table 1 in the MR.					
<b>Documentation provided by project participant</b>					
<input checked="" type="checkbox"/> Changes in the MR		Section(s): A.2		New version No.: 1.1	
<input type="checkbox"/> Changes in XLS		Worksheet(s):		New version No.:	
<input type="checkbox"/> Other:					
<b>DOE assessment</b>				<b>Date:</b>	01/06/2021
MR version 1.1, Section A.2, table 1: Provinces Banten and Sumatera Selatan are included in West Java province whilst Kalimantan Tengah included in South Sulawesi province.					
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>		<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed			

<b>CL ID</b>	C.1-1	<b>Section no.</b>	C	<b>Date:</b>	05/04/2021
<b>Description of CL</b>					
MR version 1.0, Section C:					
<ol style="list-style-type: none"> <li>BUS Survey and Usage Survey design: Clarification request on how the number of households of 154 reached was derived.</li> <li>Clarification for provinces Banten, Kalimantan Tengah and Sumatera Selatan are not included in the survey.</li> </ol>					
<b>Project participant response</b>				<b>Date:</b>	31/05/2021
<ol style="list-style-type: none"> <li>This is the number of interviewed households; it is obtained by adding up the content in cells C7:F7 in the file "20210128 BUS 2021 Tabulation JRI v2.xls", sheet "Drop-off".</li> <li>Provinces Banten and Sumatera Selatan are included in the West Java province. Province Kalimantan Tengah is included in South Sulawesi province. See bottom of Table 1 of the MR Provinces Banten and Sumatera Selatan are included in the West Java province as well as an added note in cell O4733 in sheet "MASTER VPA2" of the 20210525_IDBP_Database_VPA2_v2.xls file.</li> </ol>					
<b>Documentation provided by project participant</b>					

<input checked="" type="checkbox"/> Changes in the MR	Section(s): A.3	New version No.: 1.1
<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
<input type="checkbox"/> Other:		
<b>DOE assessment</b>		<b>Date:</b> 01/06/2021
MR version 1.1, Section C:		
<ol style="list-style-type: none"> <li>BUS Survey and Usage Survey design: The number of households of 154 reached are derived from BUS 2021 Tabulation, drop off tab cell C7 – F7..</li> <li>Provinces Banten and Kalimantan Tengah are included in West Java province whilst Sumatera Selatan included in South Sulawesi describe in cell O4733 in revised Master VPA2 tab of the database.</li> </ol>		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>		<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

<b>CL ID</b>	D.2-1	<b>Section no.</b>	D.2	<b>Date:</b>	05/04/2021
<b>Description of CL</b>					
MR version 1.0, Section D.2:					
<ol style="list-style-type: none"> <li>Parameter <math>N_{T,h}</math>: According to the BUS 2021 survey, there are 7% pigs. Clarification request why pigs are no accounted.</li> <li>Parameter GS-10 Quantitative employment and income generation: Clarification on how the value 32.21 is determined.</li> </ol>					
<b>Project participant response</b>					<b>Date:</b> 31/05/2021
<ol style="list-style-type: none"> <li>Please see response also provided in last verification, GS Review comment 8.3 which was approved by the GS. The proposed exclusion is a conservative approach. According to the BUS 2021, for 87% (see p.46 of the BUS report) of households dairy cows were the primary animals; for this reason emission reductions from pig manure are not accounted for in the ER calculation. The PD therefore assumes a 100% fraction for the primary animal, which is the cow. As the MCF of cow dung is higher than of pig dung, assuming a 100% cow scenario generates higher project emissions, which is conservative.</li> <li>Based on the reported answers, an average of 0.694% of the households sell the bio-slurry (see cell S3007 of sheet "BUS 2021" in file "20210525 BUS 2021 Tabulation JRI v2.xls", which multiplied by the total number of households (4,636) results in 32,19 households (cell S3010).</li> </ol>					
<b>Documentation provided by project participant</b>					
<input checked="" type="checkbox"/> Changes in the MR	Section(s):		New version No.: 1.1		
<input type="checkbox"/> Changes in XLS	Worksheet(s):		New version No.:		
<input checked="" type="checkbox"/> Other: BUS 2021 Tabulation JRI v2.xls					
<b>DOE assessment</b>					<b>Date:</b> 01/06/2021
MR version 1.1, Section D.2:					
<ol style="list-style-type: none"> <li>Parameter <math>N_{T,h}</math>: VPA implementer explanation as above although there are 7% pigs according to BUS report, however the primary animal is cow, the dung has higher MCF as compared to pig dung. This was clarify during the previous GS review comment 8.3 and accepted by GS that cow is the primary animal. Therefore, is appropriate and higher project emissions will be generated and thus conservative.</li> <li>Parameter GS-10 Quantitative employment and income generation: The value is revised to 32.19 with the calculation is referred to cell S3010 of revised BUS 2021 Tabulation JRI v2</li> </ol>					
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>		<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed			

<b>CL ID</b>	D.2-2	<b>Section no.</b>	BUS Tabulation	<b>Date:</b>	05/04/2021
<b>Description of CL</b>					
BUS Tabulation JRI spreadsheet, BUS 2021 sheet: Clarification for source of data in cells C2716 and D2716					
<b>Project participant response</b>					<b>Date:</b> 31/05/2021

- D2716: Sum of values in cells F2716:I2716 (Y1 to Y4, which corresponds to VPA2)
- C2716: Sum of values in cells D2716:E2716 (or alternatively, sum of cells F2716:P2716 corresponding both VPA1 and VPA2)

The cells have now been linked in the file "20210128 BUS 2021 Tabulation JRI v2.xls".

**Documentation provided by project participant**

<input type="checkbox"/> Changes in the MR	Section(s):	New version No.:
<input checked="" type="checkbox"/> Changes in XLS	Worksheet(s): BUS 2021	New version No.: v2
<input type="checkbox"/> Other:		

**DOE assessment**
**Date:** 01/06/2021

BUS Tabulation JRI spreadsheet, BUS 2021 sheet: Source of data in cells C2716 and D2716 are linked correctly in the revised spreadsheet as explained above.

**Conclusion**
*Tick the appropriate checkbox*

- ☐ Additional action should be taken (finding remains open)
- ☒ The finding is closed

<b>CL ID</b>	D.2-3	<b>Section no.</b>	ER spreadsheet	<b>Date:</b>	05/04/2021
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**Description of CL**

ER spreadsheet version 1.0:

1. GS VER 2020 sheet: Clarification on the data applied in cell E85 (365-((1366\*15)/E84) on 15
2. GS VER 2020 sheet: Clarification for the value 1366 derives from Database sheet "PLANTMAINT" cell J41093 on plant functioning is determine.
3. Cumulative sheet: Clarification on cells C10 to AX10 have no value.
4. Cumulative sheet: Clarification on the description in cell A5.

**Project participant response**
**Date:** 31/05/2021

1. The '15' refers to the number of days that a unit is assumed to be non-operational when a technical issue is reported to the IDBP programme. This is a conservative measure for the two weeks (14 days) that the IDBP programme requires CPOs to fix any reported issues.
2. There is no value 161 in the GS VER 2020, it is 1,366 instead. The 1,366 is the number of units that have reported malfunction, as per "20210202\_IDBP\_Database\_VPA1" sheet "PLANTMAINT" cell J41091 (value=1,366).
3. The cells C10 to AX10 are supposed to be empty as this is a redundancy left from an older version of the file. The name in cell A10 has now been deleted to avoid any confusion, now this row is just empty and not part of the ER calculations.
4. Cell A5 refers to the annual drop off rate, as taken from the BUS reporting / usage survey and summarise in cells P23 to P29. These values, in turn, are taken from file "20210128 BUS 2021 Tabulation JRI v2.xls" sheet "Drop-off" cells C10 – F10, whereby we subtract 100% - the values in these respective cells to derive the drop-off % rate that features in row 5 of the ER calculation file, sheet "Cumulative VER".

**Documentation provided by project participant**

<input type="checkbox"/> Changes in the MR	Section(s):	New version No.:
<input checked="" type="checkbox"/> Changes in XLS	Worksheet(s): GS VER2020	New version No.: 02
<input type="checkbox"/> Other:		

**DOE assessment**
**Date:** 01/06/2021

ER spreadsheet version 02:	
<ol style="list-style-type: none"> <li>1. GS VER 2020 sheet: VPA Implementer explanation on how the number 15 is derived that generally add 1 day to the 14 days for any digester when out of operation to calculate the total number of digesters in operation that is conservative.</li> <li>2. GS VER 2020 sheet: VAP Implementer explain there is no value of 161 which is 1,366 units derived from cell J41091 of in Database sheet "PLANTMAINT". Therefore, is appropriately explain.</li> <li>3. Cumulative sheet: Cumulative sheet: Explain by VPA implementer, Cells C10 to AX10 are redundancy due to from previous version. Description in Cell A10 deleted to avoid confusion, left empty and not relevant to ER calculations. The cells are updated accordingly.</li> <li>4. Cumulative sheet: VPA Implementer explained the annual drop off rate is summarised in cells P23 to P29 derived from the BUS report. The BUS report is review for the drop off rate capture in cells C10 to F10 and in row 5 of the ER calculation sheet for the monitoring period.</li> </ol>	
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

## CARs from this verification

<b>CAR ID</b>	A.1-1	<b>Section no.</b>	Cover page	<b>Date:</b>	05/04/2021
<b>Description of CAR</b>					
MR version 1.0, Cover page:					
<ol style="list-style-type: none"> <li>1. Duration of this monitoring period is incorrect</li> <li>2. Project Representative shall be describe in full</li> <li>3. The end dates in table 2 is incorrect</li> </ol>					
<b>Project participant response</b>					<b>Date:</b>
<ol style="list-style-type: none"> <li>1. This has been corrected now to the appropriate date format.</li> <li>2. Corrected to Yayasan Rumah Energi (YRE)</li> <li>3. Corrected to year 2020</li> </ol>					
<b>Documentation provided by project participant</b>					
<input checked="" type="checkbox"/>	Changes in MR	Section(s): cover	New version No.: 1.1		
<input type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:		
<input type="checkbox"/>	Other:				
<b>DOE assessment</b>					<b>Date:</b>
MR version 1.1, Cover page:					
<ol style="list-style-type: none"> <li>1. Duration of this monitoring period is corrected</li> <li>2. Project Representative corrected and describe in full</li> <li>3. The end dates in table 2 is corrected</li> </ol>					
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>		<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed			
<b>Description of CAR</b>					<b>Date:</b>
MR version 1.1 Cover page: According to the MoU dated 26/02/2021 signed between HIVOS and Yayasan Rumah Energi, the Project Representative is HIVOS. However, YRE was describe.					
<b>Project participant response</b>					<b>Date:</b>
The cover page of the MR has been updated to change YRE into Hivos.					
<b>Documentation provided by project participant</b>					
<input checked="" type="checkbox"/>	Changes in MR	Section(s): cover	New version No.: 1.2		
<input type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:		
<input type="checkbox"/>	Other:				
<b>DOE assessment</b>					<b>Date:</b>
MR version 1.2, Cover page: The project representative is corrected to HIVOS					

<b>Conclusion</b> Tick the appropriate checkbox	<input type="checkbox"/> Additional action should be taken (finding remains open)
	<input checked="" type="checkbox"/> The finding is closed

<b>CAR ID</b>	B.1-1	<b>Section no.</b>	B.1	<b>Date:</b>	05/04/2021	
<b>Description of CAR</b>						
MR version 1.0, Section B.1:						
<ol style="list-style-type: none"> <li>1. The new design for 1 to 3m<sup>3</sup> is not described.</li> <li>2. Table 2: The number of units for period 01/01/2019 to 31/12/2019 are inconsistent with previous MP3 MR.</li> <li>3. The no. of installed digesters shall be corrected throughout the MR in lieu of above 2.</li> <li>4. Figure 2 did not include digester capacity of 1 to 3m<sup>3</sup>.</li> <li>5. Table 4: Total capacity shall be corrected in lieu of above item 2.</li> </ol>						
<b>Project participant response</b>					<b>Date:</b>	31/05/2021
<ol style="list-style-type: none"> <li>1. Sentence added on the inclusion of the small plastic bag digesters as the result of the PRC.</li> <li>2. After a review of the IDBP database, we take note of three biodigesters that should have been removed as they relate to units that are fed by organic waste. These include: SGP0582, SGP0545, and SGP0578. These units were installed in May, September and November 2019. The remaining three units were wrongly attributed to December 2019, and should feature in January 2020. With this update, the total number of units in 2019 stands at 770. Note that this change reduced the total final number of units from 4,639 to 4,636. As a result of this, the entire MR has been updated to reflect this change, including all the SDG indicators linked to this value as well as the final ER calculation, which now is slightly lowered.</li> <li>3. The number of digesters has been updated to 770 for the year 2019, see Table 2 of the Monitoring Report v1.1, and other sections in the MR where the total number of unit is reported.</li> <li>4. Figure 2 has been updated to include the overview of all included digesters, including the 1 to 3 m3 units.</li> <li>5. The capacity has changed slightly to 7.18 kWth, as per cell C6 of sheet "Capacity calculation" of the ER calculation sheet.</li> </ol>						
<b>Documentation provided by project participant</b>						
<input checked="" type="checkbox"/> Changes in MR	Section(s): throughout the MR				New version No.: 1.1	
<input checked="" type="checkbox"/> Changes in XLS	Worksheet(s): 20210525 BUS 2021 Tabulation JRI v2; 20210525_IDBP_Database_VPA2_v2; 20210525 ER Calculation VPA 2 MP4 CP1_v02				New version No.: v2; v2; and v02, respectively	
<input type="checkbox"/> Other:						
<b>DOE assessment</b>					<b>Date:</b>	01/06/2021
MR version 1.0, Section B.1:						
<ol style="list-style-type: none"> <li>1. The new design for 1 to 3m<sup>3</sup> is added and described according to the PRC.</li> <li>2. Table 2: The number of units for period 01/01/2019 to 31/12/2019 corrected and consistent with previous MP3 MR.</li> <li>3. The no. of digester corrected throughout the MR with correction of above item 2.</li> <li>4. Figure 2 updated and include digester capacity of 1 to 3m<sup>3</sup>.</li> <li>5. Table 4: Total capacity corrected with the correction of 2 above.</li> </ol>						
<b>Description of CAR</b>					<b>Date</b>	28/06/2021
MR version 1.1, Section B.1: The roles of HIVOS and Yayasan Rumah Energi should be describe.						
<b>Project participant response</b>					<b>Date:</b>	29/06/2021
Section B.1 has been updated to clarify that Hivos is the project representative and YRE the VPA implementer.						
<b>Documentation provided by project participant</b>						
<input checked="" type="checkbox"/> Changes in MR	Section(s): throughout the MR				New version No.: 1.2	

<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
<input type="checkbox"/> Other:		
<b>DOE assessment</b>		<b>Date:</b> 30/06/2021
MR version 1.2 Section B.1: Updated to clarify the roles of HIOVS as project representative and YRE as VPA implementer.		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed	

<b>CAR ID</b>	B.2-1	<b>Section no.</b>	B.2.5	<b>Date:</b>	05/04/2021
<b>Description of CAR</b>					
MR version 1.0, Section B.2.5: A design change approved by GS on 20/02/2012 for the new plastic polyethylene digester is not described.					
<b>Project participant response</b>					<b>Date:</b> 31/05/2021
See updated section B.2.5 presenting information on the PRC.					
<b>Documentation provided by project participant</b>					
<input checked="" type="checkbox"/> Changes in MR	Section(s): B.2.5		New version No.: 1.1		
<input type="checkbox"/> Changes in XLS	Worksheet(s):		New version No.:		
<input type="checkbox"/> Other:					
<b>DOE assessment</b>					<b>Date:</b> 01/06/2021
MR version 1.1, Section B.2.5: A design change approved by GS on 20/02/2012 for the new plastic polyethylene digester updated and according to the VPA2 VPA-DD. VPA-DD is reviewed for correctness.					
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed				

<b>CAR ID</b>	C.1-2	<b>Section no.</b>	C	<b>Date:</b>	05/04/2021
<b>Description of CAR</b>					
MR version 1.0, Section C:					
<ol style="list-style-type: none"> <li>1. According to the BUS report the reference should be 2020 report instead of 2021 throughout the MR.</li> <li>2. The BUS survey date is inconsistent with the BUS report.</li> </ol>					
<b>Project participant response</b>					<b>Date:</b> 31/05/2021
<ol style="list-style-type: none"> <li>1. Please note that the BUS is always called the year of its publication. So if we now change to one year earlier, last years reporting will be confusing as there we apply 'BUS 2020'. All documents/references are called BUS 2021, and on p.14 of the MR we clarify to avoid doubt that "The survey was executed in November - December 2020 (referred to in this document as "BUS 2021")"</li> <li>2. The BUS date as per the BUS report has been updated in the MR accordingly. Please see the edits in section C, Article IV</li> </ol>					
<b>Documentation provided by project participant</b>					
<input checked="" type="checkbox"/> Changes in MR	Section(s): C		New version No.: v1.1		
<input type="checkbox"/> Changes in XLS	Worksheet(s):		New version No.:		
<input type="checkbox"/> Other:					
<b>DOE assessment</b>					<b>Date:</b> 01/06/2021
MR version 1.1, Section C:					
<ol style="list-style-type: none"> <li>1. VPA implementer explain BUS reference is always the year of publication although the survey is conducted in year 2020. For this monitoring period BUS was published in 2021. Therefore, is referred as BUS 2021.</li> <li>2. The BUS survey date is corrected and consistent with the BUS report.</li> </ol>					
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed				

<b>CAR ID</b>	D.2-4	<b>Section no.</b>	D.2	<b>Date:</b>	05/04/2021
<b>Description of CAR</b>					

MR version 1.0, Section D.2:

1. Parameter  $U_{p1,y}$ : The value to be corrected with correction for no. of units in MP3
2. Parameter  $N_{p1,y}$ : The number of days for the MP is 366. The number days applied is incorrect.
3. Parameter  $No_{p1,y}$ : The number of units to be corrected
4. Parameter  $O_{p1,y}$ : The number of days shall be corrected to 366.
5. Parameter  $O_{p1,y}$ : The sheet reference is incorrect.
6. Parameter  $MS_{P,S,k}$ : The data in the reference cell T2291 shall be made consistent with value in MR
7. Parameter  $MS_{T,S,k}$ : The data in the reference cell T2290 shall be made consistent with value in MR
8. Parameter GS-03 Soil condition: The number of households to be corrected.
9. Parameter GS-07 Livelihood of the poor: There is no value in cells C3718 to C3720.
10. Parameter GS-08 Access to affordable and clean energy services: The value to be corrected
11. GS-13 Establishment of sustainable food production area: The value to be corrected with the correction for number of households.

**Project participant response****Date:** 31/05/2021

1. The value has been adapted to reflect the lowered number of total units installed.
2. The  $N_{p1y}$  parameter has been updated accordingly.
3. The value has been adapted to reflect the lowered number of total units installed.
4. Updated to 366.
5. The reference has been updated as per request.
6. The figure in the MR document (27.7%) is consistent with the value in cell T2291 of file "20210128 BUS 2021 Tabulation JRI v2.xls" | sheet BUS 2021".
7. The figure in the MR document (72.3%) is consistent with the value in cell T2290 of file "20210128 BUS 2021 Tabulation JRI.xls" | sheet BUS 2021".
8. The value has been adapted to reflect the number of total units installed.
9. Values added to the cells mentioned.
10. The value has been adapted to reflect the number of total units installed.
11. The value has been adapted to reflect the number of total units installed.

**Documentation provided by project participant**

<input checked="" type="checkbox"/>	Changes in MR	Section(s): D.2	New version No.: 1.1
<input type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:
<input checked="" type="checkbox"/>	Other: BUS 2021 v2		

**DOE assessment****Date:** 01/06/2021

MR version 1.1, Section D.2:

1. Parameter  $U_{p1,y}$ : The value corrected with correction for no. of units in MP3
2. Parameter  $N_{p1,y}$ : The number of days for the MP is 366. The number days applied is updated.
3. Parameter  $No_{p1,y}$ : The number of units corrected
4. Parameter  $O_{p1,y}$ : The number of days corrected to 366.
5. Parameter  $O_{p1,y}$ : The sheet reference is corrected.
6. Parameter  $MS_{P,S,k}$ : The data in the reference cell T2291 updated and consistent with value in MR
7. Parameter  $MS_{T,S,k}$ : The data in the reference cell T2290 updated and consistent with value in MR
8. Parameter GS-03 Soil condition: The number of households corrected accordingly
9. Parameter GS-07 Livelihood of the poor: Value are added to cells C3718 to C3720.
10. Parameter GS-08 Access to affordable and clean energy services: The value corrected accordingly
11. GS-13 Establishment of sustainable food production area: The value corrected with the correction for number of households.

**Conclusion**

Tick the appropriate checkbox

- ☐ Additional action should be taken (finding remains open)
- ☒ The finding is closed

<b>CAR ID</b>	D.2-5	<b>Section no.</b>	ER spreadsheet	<b>Date:</b>	05/04/2021	
<b>Description of CAR</b>						
ER spreadsheet version 1.0:						
<ol style="list-style-type: none"> <li>1. GS VER 2020 sheet: The number of digesters to be correction throughout the spreadsheet.</li> <li>2. GS VER 2020 sheet: The number of days in cell E85 shall be corrected.</li> <li>3. Cumulative sheet: Cell H1 is incorrect</li> <li>4. Cumulative sheet: Date in Cell M26 to be corrected.</li> <li>5. Capacity Calculation sheet: Data in cell C3 to be corrected.</li> </ol>						
<b>Project participant response</b>					<b>Date:</b>	31/05/2021
<ol style="list-style-type: none"> <li>1. The value has been adapted to reflect the number of total units installed across the sheet.</li> <li>2. Number of days have been corrected to 366.</li> <li>3. H1 cell corrected to show MP4 instead.</li> <li>4. Date has been corrected.</li> <li>5. The value has been adapted to reflect the lowered number of total units installed..</li> </ol>						
<b>Documentation provided by project participant</b>						
<input type="checkbox"/> Changes in MR	Section(s):			New version No.:		
<input checked="" type="checkbox"/> Changes in XLS	Worksheet(s): 20210525 ER Calculation VPA 2 MP4 CP1_v02, sheet "Cumulative VER"			New version No.: 02		
<input type="checkbox"/> Other:						
<b>DOE assessment</b>					<b>Date:</b>	01/06/2021
ER spreadsheet version 1.1:						
<ol style="list-style-type: none"> <li>1. GS VER 2020 sheet: The number of digesters corrected throughout the spreadsheet.</li> <li>2. GS VER 2020 sheet: The number of days in cell E85 corrected to 366 days.</li> <li>3. Cumulative sheet: Cell H1 is corrected to read as MP4</li> <li>4. Cumulative sheet: Date in Cell M26 corrected as this MP</li> <li>5. Capacity Calculation sheet: Data in cell C3 corrected to read as 4636 units</li> </ol>						
<b>Conclusion</b>						
Tick the appropriate checkbox		<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed				



<b>CAR ID</b>	D.2-6	<b>Section no.</b>	BUS Tabulation JRI	<b>Date:</b>	05/04/2021	
<b>Description of CAR</b>						
BUS Tabulation JRI spreadsheet: BUS 2021 sheet:						
<ol style="list-style-type: none"> <li>1. The comment in cell S2990 is not included in the table.</li> <li>2. Cell Y2990 shall be corrected</li> <li>3. Cells S3262 to S3266 have no data</li> <li>4. Data in cells R3914 and R3943 incorrect</li> </ol>						
<b>Project participant response</b>					<b>Date:</b>	31/05/2021
<ol style="list-style-type: none"> <li>1. The comment in cell S2990 on "Missing to include: Used as fish feed and the one in Indonesian" has been deleted in v2 (20210525 BUS 2021 Tabulation JRI v2.xls) as the comment is no longer relevant. The calculation in cell T2981 has been updated to include also reference to cells C2988 and C2989, which were the two missing inputs originally not included in the calculation presented here. Now, cell T2987 adds up to 100%.</li> <li>2. The formula in the cell Y2990 has been corrected to reflect the lowered number of total units installed used in the multiplication (4,636).</li> <li>3. Cells S3262 to S3266 have been updated to include the number of units installed in the respective years.</li> <li>4. The formula in the cell R3914 and R3943 have been corrected to reflect the lowered number of total units installed used in the multiplication (4,636).</li> </ol>						
<b>Documentation provided by project participant</b>						
<input type="checkbox"/> Changes in MR		Section(s):		New version No.:		
<input checked="" type="checkbox"/> Changes in XLS		Worksheet(s): BUS 2021		New version No.:v2		
<input type="checkbox"/> Other:						
<b>DOE assessment</b>					<b>Date:</b>	01/06/2021
BUS Tabulation JRI spreadsheet version 2: BUS 2021 sheet:						
<ol style="list-style-type: none"> <li>1. The comment in cell S2990 is deleted as it is no longer relevant as explained by the VPA Implementer. Cell T2981 has been updated to include missing inputs from cells C2986 and C2989 and appropriately.</li> <li>2. Cell Y2990 corrected to reflect the total units installed of 4,636.</li> <li>3. Cells S3262 to S3266 updated with the number of units installed for each year.</li> <li>4. Data in cells R3914 and R3943 corrected according to the number of units installed.</li> </ol>						
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>		<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed				

<b>CAR ID</b>	D.2-7	<b>Section no.</b>	Database	<b>Date:</b>	05/04/2021	
<b>Description of CAR</b>						
Database spreadsheet, Master VPA-2 sheet: The table at Overview of digesters per provinces in cells O4724 did not include Banten, Kalimantan Tengah and Sumatera Selatan.						
<b>Project participant response</b>					<b>Date:</b>	31/05/2021
<p>Provinces Banten and Sumatera Selatan are included in the West Java province</p> <p>Province Kalimantan Tengah is included in South Sulawesi province. See bottom of Table 1 of the MR as well as an added note in cell O4733 in sheet "MASTER VPA2" of the 20210525_IDBP_Database_VPA2_v2.xls file.</p>						
<b>Documentation provided by project participant</b>						
<input checked="" type="checkbox"/> Changes in MR		Section(s): A.3		New version No.: 1.1		
<input type="checkbox"/> Changes in XLS		Worksheet(s):		New version No.:		
<input type="checkbox"/> Other:						
<b>DOE assessment</b>					<b>Date:</b>	01/06/2021
Database spreadsheet, Master VPA-2 sheet: The table at Overview of digesters per provinces in cell C4733 describe Banten, Kalimantan Tengah are included West Java province and Sumatera Selatan include in South Sulawesi.						

<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> Additional action should be taken (finding remains open)
	<input checked="" type="checkbox"/> The finding is closed

<b>CAR ID</b>	D.3-1	<b>Section no.</b>	D.3	<b>Date:</b>	05/04/2021
<b>Description of CAR</b>					
MR version 1.0, Section D.3:					
1. The section is not filled according to the guidance for filling up the template 2. Several parameters values to be corrected with the corrections of above findings.					
<b>Project participant response</b>					<b>Date:</b>
					31/05/2021
1. Section D.3 has been updated accordingly. 2. Section D.3 has been updated accordingly to account for the comments raised in above findings.					
<b>Documentation provided by project participant</b>					
<input checked="" type="checkbox"/> Changes in MR		Section(s): D.3		New version No.: 1.1	
<input type="checkbox"/> Changes in XLS		Worksheet(s):		New version No.:	
<input type="checkbox"/> Other:					
<b>DOE assessment</b>					<b>Date:</b>
					01/06/2021
MR version 1.1, Section D.3:					
1. The section is completed according to the guidance for filling up the template. 2. Several parameter values have corrected as per the corrections of above findings.					
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> Additional action should be taken (finding remains open)				
	<input checked="" type="checkbox"/> The finding is closed				

<b>CAR ID</b>	E.1-1	<b>Section no.</b>	E.1	<b>Date:</b>	05/04/2021
<b>Description of CAR</b>					
MR version 1.0, Section E.1 is not filled according to the guidance for filling up the template					
<b>Project participant response</b>					<b>Date:</b>
					31/05/2021
Updated as per request.					
<b>Documentation provided by project participant</b>					
<input checked="" type="checkbox"/> Changes in MR		Section(s): E.1		New version No.: 1.1	
<input type="checkbox"/> Changes in XLS		Worksheet(s):		New version No.:	
<input type="checkbox"/> Other:					
<b>DOE assessment</b>					<b>Date:</b>
					01/06/2021
MR version 1.0, Section E.1 is updated and filled according to the guidance for filling up the template					
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> Additional action should be taken (finding remains open)				
	<input checked="" type="checkbox"/> The finding is closed				

<b>CAR ID</b>	E.2-1	<b>Section no.</b>	E.2	<b>Date:</b>	05/04/2021
<b>Description of CAR</b>					
MR version 1.0, Section E.2 is not filled according to the guidance for filling up the template					
<b>Project participant response</b>					<b>Date:</b>
					31/05/2021
Updated as per request.					
<b>Documentation provided by project participant</b>					
<input checked="" type="checkbox"/> Changes in MR		Section(s): E.2		New version No.: 1.1	
<input type="checkbox"/> Changes in XLS		Worksheet(s):		New version No.:	
<input type="checkbox"/> Other:					
<b>DOE assessment</b>					<b>Date:</b>
					01/06/2021
MR version 1.1, Section E.2 is updated and filled according to the guidance for filling up the template					
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> Additional action should be taken (finding remains open)				
	<input checked="" type="checkbox"/> The finding is closed				

<b>CAR ID</b>	E.3-1	<b>Section no.</b>	E.3	<b>Date:</b>	05/04/2021
<b>Description of CAR</b>					

MR version 1.0, Section E.3 is not filled according to the guidance for filling up the template and Section H is not found.			
<b>Project participant response</b>		<b>Date:</b>	31/05/2021
Updated as per request.			
<b>Documentation provided by project participant</b>			
<input checked="" type="checkbox"/> Changes in MR	Section(s): E.3	New version No.: 1.1	
<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:	
<input type="checkbox"/> Other:			
<b>DOE assessment</b>		<b>Date:</b>	01/06/2021
MR version 1.0, Section E.3 is updated and filled according to the guidance for filling up the template.			
Section H sentence is deleted and appropriate.			
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>		<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed	

<b>CAR ID</b>	E.4-1	<b>Section no.</b>	E.4	<b>Date:</b>	05/04/2021
<b>Description of CAR</b>					
MR version 1.0, Section E.4: The following to be corrected with the correction of the above findings.					
SDG 13: Climate Action; GS-03 Soil condition; GS-08 Access to affordable and clean energy services; GS-12 Technology transfer and technological self-reliance					
<b>Project participant response</b>					<b>Date:</b>
					31/05/2021
The referred to GS indicators have now been updated as a result of the findings.					
<b>Documentation provided by project participant</b>					
<input type="checkbox"/> Changes in MR	Section(s): E.4		New version No.: v1.1		
<input type="checkbox"/> Changes in XLS	Worksheet(s):		New version No.:		
<input type="checkbox"/> Other:					
<b>DOE assessment</b>					<b>Date:</b>
					01/06/2021
MR version 2.0, Section E.4: The following are corrected with the correction of the above findings.					
SDG 13: Climate Action; GS-03 Soil condition; GS-08 Access to affordable and clean energy services; GS-12 Technology transfer and technological self-reliance					
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>		<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed			

<b>CAR ID</b>	E.5-1	<b>Section no.</b>	E.5	<b>Date:</b>	05/04/2021
<b>Description of CAR</b>					
MR version 1.0, Section E.5: The following to be corrected with the correction of the above findings.					
SDG 13: Climate Action; GS-03 Soil condition; GS-08 Access to affordable and clean energy services; GS-12 Technology transfer and technological self-reliance					
<b>Project participant response</b>					<b>Date:</b>
					31/05/2021
The referred to GS indicators have now been updated as a result of the findings.					
<b>Documentation provided by project participant</b>					
<input checked="" type="checkbox"/> Changes in MR	Section(s): E.5		New version No.: v1.1		
<input type="checkbox"/> Changes in XLS	Worksheet(s):		New version No.:		
<input type="checkbox"/> Other:					
<b>DOE assessment</b>					<b>Date:</b>
					01/06/2021
MR version 1.1, Section E.5: The following SDGs have been updated with the corrections of the above findings.					
SDG 13: Climate Action; GS-03 Soil condition; GS-08 Access to affordable and clean energy services; GS-12 Technology transfer and technological self-reliance					
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>		<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed			

<b>CAR ID</b>	E.5-2	<b>Section no.</b>	E.5.1	<b>Date:</b>	05/04/2021
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<b>Description of CAR</b>		
MR version 1.0, Section E.5.1 is not filled according to the guidance for filling up the template.		
<b>Project participant response</b>	<b>Date:</b>	31/05/2021
Updated as per request.		
<b>Documentation provided by project participant</b>		
<input checked="" type="checkbox"/> Changes in MR	Section(s): E.5	New version No.: 1.1
<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
<input type="checkbox"/> Other:		
<b>DOE assessment</b>	<b>Date:</b>	01/06/2021
MR version 1.1, Section E.5.1 is updated and filled according to the guidance for filling up the template to include the calculation for SDG13 for climate change.		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed	

<b>CAR ID</b>	E.6-1	<b>Section no.</b>	E.6	<b>Date:</b>	05/04/2021
<b>Description of CAR</b>					
MR version 1.0, Section E.6 is not filled according to the guidance for filling up the template.					
<b>Project participant response</b>					<b>Date:</b>
					31/05/2021
Updated as per request.					
<b>Documentation provided by project participant</b>					
<input checked="" type="checkbox"/> Changes in MR		Section(s): E.6		New version No.: 1.1	
<input type="checkbox"/> Changes in XLS		Worksheet(s):		New version No.:	
<input type="checkbox"/> Other:					
<b>DOE assessment</b>					<b>Date:</b>
					01/06/2021
MR version 1.1, Section E.6 is updated and filled according to the guidance for filling up the template to include the calculation for SDG13 for climate change. No other ex-ante data for other SDGs parameters for comparison.					
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>		<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed			

<b>CAR ID</b>	F.1-1	<b>Section no.</b>	F	<b>Date:</b>	05/04/2021
<b>Description of CAR</b>					
MR version 1.0, Section F is not filled according to the guidance for filling up the template.					
<b>Project participant response</b>					<b>Date:</b>
					31/05/2021
Updated as per request, with the following clarification added: "No additional safeguarding principles that were added to the monitoring plan."					
<b>Documentation provided by project participant</b>					
<input checked="" type="checkbox"/> Changes in MR		Section(s): F		New version No.: 1.1	
<input type="checkbox"/> Changes in XLS		Worksheet(s):		New version No.:	
<input type="checkbox"/> Other:					
<b>DOE assessment</b>					<b>Date:</b>
					01/06/2021
MR version 1.1, Section F is filled according to the guidance for filling up the template.					
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>		<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed			

<b>CAR ID</b>	G.1-1	<b>Section no.</b>	G.1, G.2, G.3	<b>Date:</b>	05/04/2021
<b>Description of CAR</b>					
MR version 1.0, Sections G.1, G.2 and G.3 are not filled according to the guidance for filling up the template.					
<b>Project participant response</b>					<b>Date:</b>
					31/05/2021
Updated as per request.					
<b>Documentation provided by project participant</b>					
<input checked="" type="checkbox"/> Changes in MR		Section(s): G		New version No.: 1.1	
<input type="checkbox"/> Changes in XLS		Worksheet(s):		New version No.:	

<input type="checkbox"/> Other:			
<b>DOE assessment</b>			<b>Date:</b> 01/06/2021
MR version 1.0, Sections G.1, G.2 and G.3 are filled according to the guidance for filling up the template.			
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>		<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed	

**FARs from this verification**

<b>FAR ID</b>		<b>Section No.</b>		<b>Date:</b>	
<b>Description of FAR</b>					
NA					
<b>Project participant response</b>				<b>Date:</b>	
<b>Documentation provided by project participant</b>					
<input type="checkbox"/> Changes in MR		Section(s):		New version No.:	
<input type="checkbox"/> Changes in XLS		Worksheet(s):		New version No.	
<input type="checkbox"/> Other:					
<b>VVB assessment</b>				<b>Date:</b>	

## Appendix 5. Monitored Parameters

**Table A-5:** Periodic Verification Checklist – Monitored Parameters

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
1. SDG 13 - U <sub>p1,y</sub>		Description: Cumulative usage rate for technologies in project scenario p1 in year y, based on cumulative adoption rate and drop off rate (fraction)		
<b>Measurement / Determination method (VVS, §§ 363-367)</b> <i>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.</i>	/MR/	Description:	CAR.D.2-4	OK
	/ER/	The cumulative usage rate of bio-digesters for the monitoring period is 0.8649.		
	/BUS/	The data is consolidated from the biogas usage survey results, conducted by an independent consultant.		
	/VPADD/	The data is applied to calculate the emission reductions per unit per month.		
	/TA/	Verifier´s action:		
	/GSM/	The data applied in the ER spreadsheet is crosschecked against the survey records for consistency.		
		Conclusion:		
		The parameter is monitored in accordance with the approved Transition Annex, approved revised VPA-DD and applied methodology.		
		<div><div><input checked="" type="checkbox"/></div><div>In this context the following findings have been raised:</div></div>		
		<div><div><input checked="" type="checkbox"/></div><div>CAR D.2-4</div></div>		
		<div><div><input type="checkbox"/></div><div></div></div>		

**GS-VPA-VCR-FORM**

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<b>2. SDG 13 - N<sub>p1,y</sub></b>		<b>Description: Cumulative project operational rate included in the project database for project scenario p1 against baseline scenario b1 in year y</b>		
<p><b>Measurement / Determination method (VVS, §§ 363-367)</b>  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.</p>	<p>/MR/  /BUS/  /ER/  /TA/  /VPADD/  /GSM/  /IM01-IM02//</p>	<p><i>Description:</i></p> <p>The number of bio-digesters in operation during the monitoring period.</p> <p>It is calculated using monitoring parameters N<sub>op1,y</sub> and O<sub>p1,y</sub>:</p> $N_{p1,y} = N_{op1,y} * (O_{p1,y}/366) = \text{no. of digester} * (O_{p1,y} / 366) = \text{no. of digesters in operation.}$ <p><i>Verifier's action:</i></p> <p>The database is reviewed to crosscheck on the number of units in operation during the monitoring period.</p> <p>The number of days for non-operation per year O<sub>p1,y</sub> was checked which is 15 days per year stipulated in the operation memo dated 01/05/2014.</p> <p>The calculated number of days bio-digesters (O<sub>p1,y</sub>) in operation for the monitoring period was reviewed and could be confirmed as correct.</p> <p>Step 1: Calculate the number of days of the total installed digesters in operation.</p> <p>Step 2: Calculate the number of digesters in operation</p> <p>The number of digesters in operation for this monitoring period are 4,043 units.</p> <p>The VPA implementer personnel were interviewed on the number of days each digester will not be in operation per year.</p> <p><i>Conclusion:</i></p> <p>The parameter is monitored in according to the approved revised VPA-DD and applied methodology.</p> <p><input checked="" type="checkbox"/> In this context the following findings have been raised:</p>	CAR-D-2	OK

**GS-VPA-VCR-FORM**

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)		Draft Concl.	Final Concl.
		<input checked="" type="checkbox"/>	CAR D.2-4		
		<input type="checkbox"/>			
<b>3. SDG 13 - No<sub>p1,y</sub></b>		<b>Description: Cumulative number of project technologies included in the project database for project scenario p in year y</b>			
<b>Measurement / Determination method (VVS, §§ 363-367)</b> <i>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.</i>	/MR/ /BUS/ /ER/ /TA/ /VPADD/ /GSM/ /IM02/	<b>Description:</b> The number of units installed as at 31/12/2020 is 4,636 The data is derived from the database archived at VPA implementer office in Jakarta.  <b>Verifier's action:</b> The project database was reviewed and VPA implementer personnel were interviewed on the database  The data applied in ER spreadsheet was crosschecked with the database.  <b>Conclusion:</b> The parameter is monitored in according to the approved Transition Annex, approved revised VPA-DD and applied methodology.  <input checked="" type="checkbox"/> In this context the following findings have been raised: <input checked="" type="checkbox"/> CAR D.2-4 <input type="checkbox"/>		CAR D.2-4	OK
<b>4. SDG 13 - O<sub>p1,y</sub></b>		<b>Description: The average technology-days during which the biodigesters are operational for project scenario p1 against baseline scenario b1 in year y</b>			
0) <b>Measurement / Determination method (VVS, §§ 363-367)</b>	/MR/ /DB/	<b>Description:</b> The data is calculated using the number of days with the expected number of household digesters not in operation.		CAR D.2-4	OK



**GS-VPA-VCR-FORM**

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.						
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.	/ER/ /TA/ /VPADD/ /GSM/ /IM01/	<p>Based on the operation memo dated 01/05/2014, 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.</p> <p>During this monitoring period, there were 461 units out of operation.</p> <p>For this monitoring period, the calculated number of days for the total number of installed digesters in operation is 361.58 days</p> <p><i>Verifier's action:</i></p> <p>The memo was reviewed that states the 15 days grace period and after which the digester is considered as non-operation.</p> <p>The survey report was reviewed to crosscheck on the number of households digesters non-operation were replicated and considered correct.</p> <p>The ER spreadsheet was reviewed to crosscheck on the operation days applied.</p> <p><i>Conclusion:</i></p> <p>The parameter is monitored according to the approved revised VPA-DD and applied methodology.</p> <table border="1"> <tr> <td><input checked="" type="checkbox"/></td><td>In this context the following findings have been raised:</td></tr> <tr> <td><input checked="" type="checkbox"/></td><td>CAR D.2-4</td></tr> <tr> <td><input type="checkbox"/></td><td></td></tr> </table>	<input checked="" type="checkbox"/>	In this context the following findings have been raised:	<input checked="" type="checkbox"/>	CAR D.2-4	<input type="checkbox"/>			
<input checked="" type="checkbox"/>	In this context the following findings have been raised:									
<input checked="" type="checkbox"/>	CAR D.2-4									
<input type="checkbox"/>										
<b>5. SDG 13 - LE<sub>p1,y</sub></b>		<b>Description: Leakage in project scenario p during year y</b>								
<b>1) Measurement / Determination method (VVS, §§ 363-367)</b> Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level	/MR/ /BUS/ /ER/	<p><i>Description:</i></p> <p>According to the approved Transition Annex and registered VPA-DDs, the parameter will be monitored once every two years using survey methods to meet the requirements of the applied methodology.</p>	OK	OK						

**GS-VPA-VCR-FORM**

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.				
(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.	/TA/	A survey was conducted from in December 2019 by the 3 <sup>rd</sup> party consultant to obtain the leakage for usage of biomass generally firewood and LPG and Kerosene.						
	/L/	The leakage is for the use of firewood, LPG and Kerosene in the project scenario as fuel substitution in the monitoring period.						
	/VPADD/	For this monitoring period, the leakage is 0.019 tCO <sub>2</sub> e,						
	/GCM/	Verifier’s action: The survey report indicates a leakage of 18%. The reported value in the MR and ER spreadsheet was crosschecked for consistency in the leakage calculation						
	/IM01/	Conclusion: The parameter is monitored according to the registered VPA-DDs and applied methodology.						
	/GSM/	<table><tr><td><input type="checkbox"/></td><td>In this context the following findings have been raised:</td></tr><tr><td><input type="checkbox"/></td><td></td></tr><tr><td><input type="checkbox"/></td><td></td></tr></table>	<input type="checkbox"/>	In this context the following findings have been raised:	<input type="checkbox"/>		<input type="checkbox"/>	
<input type="checkbox"/>	In this context the following findings have been raised:							
<input type="checkbox"/>								
<input type="checkbox"/>								
6. SDG 13 - N <sub>T,h</sub>		Description: Number of animals of livestock category T in premise h						
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.	/MR/ /ER/ /BUS/ /TA/ /VPADD/ /GSM/	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 cows: 5.84 Market Swine: 0. Verifier’s action: The data applied in the ER spreadsheet was cross-checked with the data from the biogas survey report and BUS spreadsheet	CLD-2-4	OK				

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Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.						
<p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>		<p>During onsite and telephone interviews, the average cows per household is approx. 5.</p> <p><i>Conclusion:</i></p> <p>The parameter is monitored in accordance with the approved Transition Annex, approved revised VPA-DD and applied methodology.</p> <table border="1" data-bbox="1108 499 1856 687"> <tr> <td data-bbox="1108 499 1182 560"><input checked="" type="checkbox"/></td> <td data-bbox="1182 499 1856 560">In this context the following findings have been raised:</td> </tr> <tr> <td data-bbox="1108 560 1182 622"><input checked="" type="checkbox"/></td> <td data-bbox="1182 560 1856 622">CL D.2-1</td> </tr> <tr> <td data-bbox="1108 622 1182 687"><input type="checkbox"/></td> <td data-bbox="1182 622 1856 687"></td> </tr> </table>	<input checked="" type="checkbox"/>	In this context the following findings have been raised:	<input checked="" type="checkbox"/>	CL D.2-1	<input type="checkbox"/>			
<input checked="" type="checkbox"/>	In this context the following findings have been raised:									
<input checked="" type="checkbox"/>	CL D.2-1									
<input type="checkbox"/>										
<p><b>7. SDG 13 - PL</b></p>		<p><b>Description: Physical leakage of the biodigester</b></p>								
<p><b>Measurement / Determination method (VVS, §§ 363-367)</b></p> <p><i>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.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>	<p>/MR/ /ER/ /TA/ /IPCC/ /VPADD/ /GSM/ /IM01/</p>	<p><i>Description:</i></p> <p>A default value of the 10% is applied for this parameter</p> <p>The value is derived from IPCC, approved Transition Annex and section D.7.1 of approved revised VPA-DD.</p> <p><i>Verifier's action:</i></p> <p>Review MR against the approved Transition Annex, approved revised VPA-DD and data applied in ER spreadsheet.</p> <p><i>Conclusion:</i></p> <p>The parameter is monitored in accordance with the approved Transition Annex, approved revised VPA-DD and applied methodology.</p> <table border="1" data-bbox="1108 1193 1856 1377"> <tr> <td data-bbox="1108 1193 1182 1254"><input type="checkbox"/></td> <td data-bbox="1182 1193 1856 1254">In this context the following findings have been raised:</td> </tr> <tr> <td data-bbox="1108 1254 1182 1316"><input type="checkbox"/></td> <td data-bbox="1182 1254 1856 1316"></td> </tr> <tr> <td data-bbox="1108 1316 1182 1377"><input type="checkbox"/></td> <td data-bbox="1182 1316 1856 1377"></td> </tr> </table>	<input type="checkbox"/>	In this context the following findings have been raised:	<input type="checkbox"/>		<input type="checkbox"/>		<p align="center">OK</p>	<p align="center">OK</p>
<input type="checkbox"/>	In this context the following findings have been raised:									
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**GS-VPA-VCR-FORM**

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.						
<b>8. SDG 13 – BB<sub>b1,bio</sub></b>		<b>Description: Quantity of biomass consumed in project scenario p during year y, in tonnes</b>								
<b>Measurement / Determination method (VVS, §§ 363-367)</b> <i>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.</i>	/MR/ /ER/ /KPT/ /TA/ /VPADD/ /GSM/ /LHH/ /IM02/	<p><i>Description:</i></p> <p>The amount of woody biomass used by the households in the project scenario is based on the KPT conducted once in every 2 years.</p> <p>The latest KPT test was conducted between 07/12/2019 to 02/01/2020 and applicable for this monitoring period.</p> <p>The woody biomass is firewood continue to use in the project scenario with the amount of 1.178 t/hh/y.</p> <p><i>Verifier's action:</i></p> <p>The data in the ER was crosschecked with the results from the KPT primary data and analysis for consistency.</p> <p>During the telephone interview, the households informed firewood is used to boil water for business and cooking during festive period or celebration.</p> <p><i>Conclusion:</i></p> <p>The parameter is monitored in accordance with the approved Transition Annex, approved revised VPA-DD and applied methodology</p> <table border="1"> <tr> <td><input type="checkbox"/></td> <td>In this context the following findings have been raised:</td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> </tr> </table>	<input type="checkbox"/>	In this context the following findings have been raised:	<input type="checkbox"/>		<input type="checkbox"/>		OK	OK
<input type="checkbox"/>	In this context the following findings have been raised:									
<input type="checkbox"/>										
<input type="checkbox"/>										
<b>9. SDG 13 – BB<sub>b1,fuel</sub></b>		<b>Description: Amount of fossil fuels used in the baseline scenario 1: households</b>								
<b>Measurement / Determination method (VVS, §§ 363-367)</b>	/MR/ /ER/	<p><i>Description:</i></p> <p>The amount of fossil fuel used by the households in the baseline scenario is based on the KPT conducted once in every 2 years.</p>	OK	OK						

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Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.						
<i>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.</i>	/KPT/ /TA/ /VPADD/ /GSM/ /LHH/ /IM02/	<p>The KPT is conducted between 07/12/2019 to 02/01/2020 for this monitoring period.</p> <p>The fossil fuel used in the baseline scenario is LPG and Kerosene.</p> <p>The baseline amount is LPG 0.074 t/hh/y and kerosene 0.028 t/hh/y.</p> <p><i>Verifier's action:</i></p> <p>The data applied in the ER was crosschecked with the results from the KPT survey data for consistency.</p> <p>During onsite and telephone interview household informed LPG is an alternative fuel.</p> <p><i>Conclusion:</i></p> <p>The parameter is monitored in accordance with the approved Transition Annex, approved revised VPA-DD and applied methodology</p> <table><tr><td><input type="checkbox"/></td><td>In this context the following findings have been raised:</td></tr><tr><td><input type="checkbox"/></td><td></td></tr><tr><td><input type="checkbox"/></td><td></td></tr></table>	<input type="checkbox"/>	In this context the following findings have been raised:	<input type="checkbox"/>		<input type="checkbox"/>			
<input type="checkbox"/>	In this context the following findings have been raised:									
<input type="checkbox"/>										
<input type="checkbox"/>										
10. SDG 13 – BB <sub>p1,fuel</sub>		<b>Description: Quantity of fossil fuel consumed in project scenario 1 during year y, in tonnes</b>								
<b>Measurement / Determination method (VVS, §§ 363-367)</b> <i>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.</i>	/MR/ /ER/ /TA/ /KPT/ /VPADD/ /IM02/ /LHH/	<p><i>Description:</i></p> <p>The amount of fossil fuel used by the households in the project scenario is based on the KPT conducted once in every 2 years.</p> <p>The fossil fuel used is LPG.</p> <p>The latest KPT test was conducted between 07/12/2019 to 02/01/2020 and applicable for this monitoring period.</p> <p>The amount of LPG used in this monitoring period is 0.087t/hh/y</p> <p><i>Verifier's action:</i></p>	OK	OK						

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Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.						
<p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>		<p>The data in the ER was crosschecked with the results from the KPT primary data and analysis for consistency.</p> <p>During onsite and telephone interviews, households informed, LPG is used as supplementary fuel.</p> <p><i>Conclusion:</i></p> <p>The parameter is monitored in accordance with the approved Transition Annex, approved revised VPA-DD and applied methodology</p> <table border="1" data-bbox="1043 576 1845 754"> <tr> <td data-bbox="1043 576 1106 636"><input type="checkbox"/></td> <td data-bbox="1106 576 1845 636">In this context the following findings have been raised:</td> </tr> <tr> <td data-bbox="1043 636 1106 697"><input type="checkbox"/></td> <td data-bbox="1106 636 1845 697"></td> </tr> <tr> <td data-bbox="1043 697 1106 758"><input type="checkbox"/></td> <td data-bbox="1106 697 1845 758"></td> </tr> </table>	<input type="checkbox"/>	In this context the following findings have been raised:	<input type="checkbox"/>		<input type="checkbox"/>			
<input type="checkbox"/>	In this context the following findings have been raised:									
<input type="checkbox"/>										
<input type="checkbox"/>										
<p><b>11. SDG 13 – BB<sub>p1,bio</sub></b></p>		<p><b>Description: Quantity of biomass consumed in project scenario p during year y, in tonnes</b></p>								
<p><b>Measurement / Determination method (VVS, §§ 363-367)</b></p> <p><i>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.</i></p>	<p>/MR/ /ER/ /KPT/ /TA/ /VPADD/ /GSM/ /LHH/ /IM02/</p>	<p><i>Description:</i></p> <p>The amount of woody biomass used by the households in the project scenario is based on the KPT conducted once in every 2 years.</p> <p>The latest KPT test was conducted between 07/12/2019 to 02/01/2020 and applicable for this monitoring period.</p> <p>The woody biomass is firewood continue to use in the project scenario with the amount of 0.621t/hh/y.</p> <p><i>Verifier's action:</i></p> <p>The data in the ER was crosschecked with the results from the KPT primary data and analysis for consistency.</p> <p>During the onsite and telephone interview, it could be confirmed firewood is used by households to boil water for business and cooking during festive period or celebration.</p> <p><i>Conclusion:</i></p>	<p align="center">OK</p>	<p align="center">OK</p>						

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Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.						
		<p>The parameter is monitored in accordance with the approved Transition Annex, approved revised VPA-DD and applied methodology</p> <p><input type="checkbox"/> In this context the following findings have been raised:</p> <table border="1"> <tr> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> </tr> </table>	<input type="checkbox"/>		<input type="checkbox"/>					
<input type="checkbox"/>										
<input type="checkbox"/>										
<b>12. SDG 13 – MS<sub>P,S,k</sub></b>		<b>Description: Fraction of livestock category T's manure not treated in bio-digester, in climate region k</b>								
<p><b>Measurement / Determination method (VVS, §§ 363-367)</b></p> <p><i>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.</i></p>	<p>/MR/ /BUS/ /ER/ /TA/ /VPADD/ /GSM/ /IM02/ /LHH/</p>	<p><i>Description:</i></p> <p>The fraction of manure not treated in the biodigesters for respective animal category as follows:</p> <table border="1"> <tr> <td>Category T</td> <td>%</td> </tr> <tr> <td>Dairy cow</td> <td>27.7</td> </tr> </table> <p>The data was derived from the usage survey conducted by an independent consultant.</p> <p><i>Verifier's action:</i></p> <p>The data applied in ER calculations is crosschecked with the usage survey report and tabulation spreadsheet for correctness.</p> <p>The telephone interview with householders could confirmed not all cow manure are fed to the digester</p> <p><i>Conclusion:</i></p> <p>The parameter is monitored according to the approved Transition Annex, approved revised VPA-DD and applied methodology.</p> <p><input checked="" type="checkbox"/> In this context the following findings have been raised:</p> <table border="1"> <tr> <td><input checked="" type="checkbox"/></td> <td>CAR D.2-4</td> </tr> </table>	Category T	%	Dairy cow	27.7	<input checked="" type="checkbox"/>	CAR D.2-4	CAR D.2-4	OK
Category T	%									
Dairy cow	27.7									
<input checked="" type="checkbox"/>	CAR D.2-4									



**GS-VPA-VCR-FORM**

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)		Draft Concl.	Final Concl.										
		<input type="checkbox"/>													
<b>13. SDG 13 - MS<sub>T,S,K</sub></b>		<b>Description: Fraction of livestock category T's manure fed into the bio-digester, S in climate region k</b>													
<b>Measurement / Determination method (VVS, §§ 363-367)</b> 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.	/MR/ /BUS/ /ER/ /VPADD/ /GSM/ /TA/ /IM01/ /LHH/	<p><i>Description:</i></p> <p>The fraction of manure fed in the biodigesters for respective animal category as follows:</p> <table border="1"> <tr> <td>Category T</td><td>%</td></tr> <tr> <td>Dairy cow</td><td>72.3</td></tr> </table> <p>The data was derived from the usage survey conducted by an independent consultant.</p> <p><i>Verifier's action:</i></p> <p>The data applied in ER spreadsheet is crosscheck with the usage survey report and tabulation for consistency.</p> <p>During onsite and telephone interviews, majority of the households have cows with a small percentage have pigs.</p> <p><i>Conclusion:</i></p> <p>The parameter is monitored according to the approved Transition Annex, approved revised VPA-DD and applied methodology.</p> <table border="1"> <tr> <td><input checked="" type="checkbox"/></td><td>In this context the following findings have been raised:</td></tr> <tr> <td><input checked="" type="checkbox"/></td><td>CAR D.2-4</td></tr> <tr> <td><input type="checkbox"/></td><td></td></tr> </table>		Category T	%	Dairy cow	72.3	<input checked="" type="checkbox"/>	In this context the following findings have been raised:	<input checked="" type="checkbox"/>	CAR D.2-4	<input type="checkbox"/>		CAR D.2-4	OK
Category T	%														
Dairy cow	72.3														
<input checked="" type="checkbox"/>	In this context the following findings have been raised:														
<input checked="" type="checkbox"/>	CAR D.2-4														
<input type="checkbox"/>															
<b>14. SDG 13 - GWP<sub>CH4</sub></b>		<b>Description: Global Warming Potential of methane</b>													
<b>Measurement / Determination method (VVS, §§ 363-367)</b>	/MR/ /ER	<p><i>Description:</i></p> <p>The GWP is the methane content applicable during the monitoring period is 25 for emissions generated as from 01/01/2013.</p>		OK	OK										



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Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>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.</i>	/TA/ /GSM/ /VPADD/ /IPCC/	<i>Verifier´s action:</i>  The GWP data applied in the MR and ER spread-sheet were verified with 2006 IPCC for consistency		
		<i>Conclusion:</i>  The parameter is monitored in accordance to the approved Transition Annex, approved revised VPA-DD and applied methodology.		
		<div><input type="checkbox"/> In this context the following findings have been raised:</div>		
		<div><div><input type="checkbox"/></div><div></div></div> <div><div><input type="checkbox"/></div><div></div></div>		
15. SDG 13 - Bio		Description: Use of bio-slurry		
<b>Measurement / Determination method (VVS, §§ 363-367)</b> <i>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.</i>	/MR/ /BUS/ /ER/ /TA/ /VPADD/ /GSM/ /IM02/ /LHH/	<i>Description:</i>  The bio-slurry used by households for farming vegetables, grass and rice fields.  Based on the usage survey conducted 42% of households apply bio-slurry for the farming.  The calculated emissions from the use of bio-slurry is per household per year for is 0.040 tCO <sub>2</sub> e/y/hh,  For conservativeness, the emissions will be deducted from the emissions reduction.  <i>Verifier´s action:</i>  The survey result was reviewed to crosscheck on the percentage of households apply bio-slurry for farming activities.  From the telephone interview, the percentage of households apply bio-slurry for farming or farming is approx. 75%.  The data applied in the ER spreadsheet was verified and the project emissions calculation for bio-slurry was reviewed and could	OK	OK

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Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.						
		<p>conclude the emissions from bio-slurry is included in the ER calculations.</p> <p><i>Conclusion:</i></p> <p>The parameter is monitored according to the approved Transition Annex, approved revised VPA-DD and applied methodology</p> <table border="1"> <tr> <td><input type="checkbox"/></td><td>In this context the following findings have been raised:</td></tr> <tr> <td><input type="checkbox"/></td><td></td></tr> <tr> <td><input type="checkbox"/></td><td></td></tr> </table>	<input type="checkbox"/>	In this context the following findings have been raised:	<input type="checkbox"/>		<input type="checkbox"/>			
<input type="checkbox"/>	In this context the following findings have been raised:									
<input type="checkbox"/>										
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<b>16. Indicator 2.4.1 - GS-03: Soil condition</b>		<b>Description: Soil condition refers to changes compared to the baseline in organic matter content</b>								
<p><b>Measurement / Determination method (VVS, §§ 363-367)</b></p> <p><i>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 VPADD and the applied methodology.</i></p>	<p>/MR/ /BUS/ /VPADD/ /TA/ /LHH/</p>	<p><i>Description:</i></p> <p>The number of households used bio-slurry for farming activities reported was 42% for this monitoring period.</p> <p>The data is derived from the Biogas Usage Survey.</p> <p><i>Verifier's action:</i></p> <p>The usage survey report was reviewed.</p> <p>During onsite and telephone interviews, 75% of householders informed they apply bio-slurry for farming activities</p> <p><i>Conclusion:</i></p> <p>The monitoring of the indicator is consistent with the approved Transition Annex and approved revised VPA-DD.</p> <table border="1"> <tr> <td><input checked="" type="checkbox"/></td><td>In this context the following findings have been raised:</td></tr> <tr> <td><input checked="" type="checkbox"/></td><td>CAR D.2-4</td></tr> <tr> <td><input type="checkbox"/></td><td></td></tr> </table>	<input checked="" type="checkbox"/>	In this context the following findings have been raised:	<input checked="" type="checkbox"/>	CAR D.2-4	<input type="checkbox"/>		CAR D.2-4	OK
<input checked="" type="checkbox"/>	In this context the following findings have been raised:									
<input checked="" type="checkbox"/>	CAR D.2-4									
<input type="checkbox"/>										

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Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.				
<b>17. Indicator 1.2.2 – GS-06: Quality of employment</b>		<b>Description: 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 well as Health and Safety courses, as proven through issuance of a certificate to all constructors, will be monitored</b>						
<b>Measurement / Determination method (VVS, §§ 363-367)</b> <i>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 VPADD and the applied methodology.</i>	/MR/ /DB/ /TA/ /VPADD/ /M/ /CPO/ /IM02/	<b>Description:</b> The number of vocational training conducted during the monitoring period was 63 as at 31/12/2020. The number of training conducted for mason and CPO are archived in the project database. <b>Verifier's action:</b> The records in the project database were verified and telephone interviews with the mason and CPO. The VPA implementer personnel were interview on the data in the database. Masons and CPOs are interviewed. <b>Conclusion:</b> The monitoring of the indicator is consistent with the approved Transition Annex and approved revised VPA-DD. <div> <input type="checkbox"/> In this context the following findings have been raised:           <table border="1"> <tr> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> </tr> </table> </div>	<input type="checkbox"/>		<input type="checkbox"/>		OK	OK
<input type="checkbox"/>								
<input type="checkbox"/>								
<b>18. Indicator 1.2.2 - GS-07 Livelihood of the poor</b>		<b>Description: Livelihood of the poor refers to changes compared to the baseline in living conditions, access to healthcare services including affordability and poverty alleviation</b>						

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Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.															
<b>Measurement / Determination method (VVS, §§ 363-367)</b> <i>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 VPADD and the applied methodology.</i>	/MR/ /BUS/ /TA/ /VPADD/ /LHH/	<p><i>Description:</i></p> <p>The improvement to the living conditions of the households with the installation of the bio-digesters based on the usage survey conducted by an independent 3<sup>rd</sup> party.</p> <p>During this monitoring period, the reported data as below:</p> <table><tr><th>Improved</th><th>Same</th><th>Worsened</th></tr><tr><td>3.205 (69.1%)</td><td>1,318 (28.4%)</td><td>113 (2.4%)</td></tr></table> <p><i>Verifier's action:</i></p> <p>The usage survey report and records were verified.</p> <p>During onsite and telephone interviews households informed the improvement in living conditions with the installation of digester.</p> <p><i>Conclusion:</i></p> <p>The monitoring of the indicator is consistent with the approved Transition Annex and approved revised VPA-DD.</p> <table><tr><td><input checked="" type="checkbox"/></td><td colspan="2">In this context the following findings have been raised:</td></tr><tr><td><input checked="" type="checkbox"/></td><td colspan="2">CAR D.2-4</td></tr><tr><td><input type="checkbox"/></td><td colspan="2"></td></tr></table>	Improved	Same	Worsened	3.205 (69.1%)	1,318 (28.4%)	113 (2.4%)	<input checked="" type="checkbox"/>	In this context the following findings have been raised:		<input checked="" type="checkbox"/>	CAR D.2-4		<input type="checkbox"/>			CAR D.2-4	OK
Improved	Same	Worsened																	
3.205 (69.1%)	1,318 (28.4%)	113 (2.4%)																	
<input checked="" type="checkbox"/>	In this context the following findings have been raised:																		
<input checked="" type="checkbox"/>	CAR D.2-4																		
<input type="checkbox"/>																			
19. Indicator 7.1.2 - GS-08 Access to affordable and clean energy services		<b>Description: Access to energy services refer to changes in unsustainable energy use. This will be monitored through the number of biogas units commissioned</b>																	
<b>Measurement / Determination method (VVS, §§ 363-367)</b> <i>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)).</i>	/MR/ /BUS/ TA/ /VPADD/ /IM02/	<p><i>Description:</i></p> <p>The number of bio-digesters implemented that benefit as at 31/12/2030 are 4,636 units.</p> <p>The data is captured in the project database.</p> <p><i>Verifier's action:</i></p>	CAR D.2-4	OK															

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Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.	
<i>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.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPADD and the applied methodology.</i>		The project database was reviewed and the data handling process personnel was interviewed to confirm the data.			
		<i>Conclusion:</i> The monitoring of the indicator is consistent with the approved Transition Annex and approved revised VPA-DD.			
		<input checked="" type="checkbox"/>			In this context the following findings have been raised:
		<input checked="" type="checkbox"/>			CAR D.2-4
		<input type="checkbox"/>			
20. Indicator 5.4.1 - GS-09 Human and institutional capacity		<b>Description: 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</b>			
<b>Measurement / Determination method (VVS, §§ 363-367)</b> <i>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)).</i> <i>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.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPADD and the applied methodology.</i>	/MR/ /DB/ /VPADD/ /TA/ /IM02/ /LHH/ /CPO/ /M/	<i>Description:</i>  The number of operational and maintenance trainings conducted as at 31/12/2020 were 1,082  The number of training conducted are captured in the project database.  <i>Verifier’s action:</i>  The records in the project database were verified and the VPA implementer personnel were interview on the data in the database.  During onsite and telephone interviews households informed they receive training from the mason and CPO.  CPO and masons are interviewed  <i>Conclusion:</i>	OK	OK	

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Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.				
		<div>The monitoring of the indicator is consistent with the approved Transition Annex and approved revised VPA-DD</div> <div><div><input type="checkbox"/></div><div>In this context the following findings have been raised:</div><div><div><input type="checkbox"/></div><div></div></div><div><div><input type="checkbox"/></div><div></div></div></div>						
21. Indicator 1.2.2 - GS-10 Quantitative employment and income generation		<b>Description: 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</b>						
<b>Measurement / Determination method (VVS, §§ 363-367)</b> <i>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 VPADD and the applied methodology.</i>	<div>/MR/</div> <div>/TA/</div> <div>/DB/</div> <div>/T/</div> <div>/VPADD/</div> <div>/IM02/</div> <div>/LHH/</div>	<div><div>Description:</div><div>The number of employments created for this monitoring period as follows:</div><table><tr><th>Direct jobs &amp; number of CPO</th><th>No. Households sell bio-slurry</th></tr><tr><td>184</td><td>32.19 (0.7%)</td></tr></table><div>The number of jobs created is derived by the project database records archived in the central office.</div><div>The number of households who sells the bio-slurry is derived from the usage survey report.</div><div>Verifier’s action:</div><div>The employment records were reviewed and VPA implementer personnel were interviewed on the database.</div><div>The usage survey report was reviewed to crosscheck on the number of households sells bio-slurry.</div><div>From onsite and telephone interview, the number of households informed they do not sell bio-slurry.</div><div>Conclusion:</div></div>	Direct jobs & number of CPO	No. Households sell bio-slurry	184	32.19 (0.7%)	CL D.2-1	OK
Direct jobs & number of CPO	No. Households sell bio-slurry							
184	32.19 (0.7%)							

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Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<div>The monitoring of the indicator is consistent with the approved Transition Annex and approved revised VPA-DD</div> <div> <input checked="" type="checkbox"/> In this context the following findings have been raised: <div> <input checked="" type="checkbox"/> CL D.2-1 <input type="checkbox"/> </div> </div>		
<b>22. Indicator 7.1.2 - GS-12 Technology transfer and technological self-reliance</b>		<b>Description: 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. Also, the entities outside of the programme in general and technical training about the functioning of the biodigester technology to promote knowledge dissemination and strengthen the domestic biogas market will be monitored.</b>		
<b>Measurement / Determination method (VVS, §§ 363-367)</b> 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 VPADD and the applied methodology.	/ MR / / DB / / TA / / VPADD / / IM02 / / CPO / / M / LHH /	<div> <b>Description:</b>  The number of operational and maintenance trainings conducted are 4,408  The number of training conducted are captured in the project database. </div> <div> <b>Verifier's action:</b>  The records in the project database were verified and the VPA implementer personnel were interview on the data in the database  During the onsite and telephone interviews households informed they received training from the mason and CPO.  The mason and CPO were interviewed. </div> <div> <b>Conclusion:</b>  The monitoring of the indicator is consistent with the approved Transition Annex and approved revised VPA-DD </div>	OK	OK



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Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.				
		<div> <input type="checkbox"/> In this context the following findings have been raised:           <table border="1" data-bbox="1108 323 1856 451"> <tr> <td data-bbox="1108 323 1182 387"><input type="checkbox"/></td> <td data-bbox="1182 323 1856 387"></td> </tr> <tr> <td data-bbox="1108 387 1182 451"><input type="checkbox"/></td> <td data-bbox="1182 387 1856 451"></td> </tr> </table> </div>	<input type="checkbox"/>		<input type="checkbox"/>			
<input type="checkbox"/>								
<input type="checkbox"/>								
<b>23. Indicator 2.4.1 - GS-13 Establishment of sustainable food production area</b>		<b>Description: Area with application of bioslurry or compost.</b>						
<p><b>Measurement / Determination method (VVS, §§ 363-367)</b>  <i>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 VPADD and the applied methodology.</i></p>	/MR/ /BUS/ /TA/ /VPADD/ /TD/ /IM02/ /LHH/	<p><b>Description:</b></p> <p>The parameter monitors the area where the bio-slurry or compost applied by the households.</p> <p>The data is derived from the usage survey conducted by an independent 3<sup>rd</sup> party.</p> <p>During this monitoring period, the reported data 15.45 ha of land where the bio-slurry or compost is applied.</p> <p><b>Verifier's action:</b></p> <p>The usage survey report and records were verified.</p> <p>From onsite and telephone interview households informed the area for the bio-slurry or compost applied.</p> <p><b>Conclusion:</b></p> <p>The monitoring of the indicator is consistent with the approved Transition Annex and approved revised VPA-DD</p> <div> <input checked="" type="checkbox"/> In this context the following findings have been raised:           <table border="1" data-bbox="1108 1174 1856 1302"> <tr> <td data-bbox="1108 1174 1182 1238"><input checked="" type="checkbox"/></td> <td data-bbox="1182 1174 1856 1238">CAR D.2-4</td> </tr> <tr> <td data-bbox="1108 1238 1182 1302"><input type="checkbox"/></td> <td data-bbox="1182 1238 1856 1302"></td> </tr> </table> </div>	<input checked="" type="checkbox"/>	CAR D.2-4	<input type="checkbox"/>		CAR D.2-4	OK
<input checked="" type="checkbox"/>	CAR D.2-4							
<input type="checkbox"/>								
<b>24. Indicator 5.4.1 - GS-14 Time saved</b>		<b>Description: The share of women indicating to save time by not having to collect biomass for cooking purposes after the installation of the biodigester</b>						



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Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<b>Measurement / Determination method (VVS, §§ 363-367)</b> <i>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 VPADD and the applied methodology.</i>	/MR/	<i>Description:</i>	OK	OK
	/BUS/	The parameter monitors the proportion of women who claim time savings by not collecting biomass fuel with the biodigester installed.		
	/TA/	The data is derived from the usage survey conducted by an independent 3 <sup>rd</sup> party.		
	/VPADD	During this monitoring period, the reported data is 60.5% of the women have time saved.		
	/IM02/	<i>Verifier's action:</i>		
	/LHH/	The usage survey report and records were verified.  Onsite and telephone interview households informed they are able to do other activities with the time spend.  From the interview, 71% of the households have more time to carry out other income generating activities.		
		<i>Conclusion:</i>		
		The monitoring of the indicator is consistent with the approved Transition Annex and approved revised VPA-DD		
		<div><div><input type="checkbox"/></div><div>In this context the following findings have been raised:</div></div>		
		<div><div><input type="checkbox"/></div><div></div></div>		
		<div><div><input type="checkbox"/></div><div></div></div>		
25. Indicator 5.4.1 - GS-15 Productive use of time		<b>Description: Share of women indicating to use the additional saved time that has been freed up by not having to collect biomass for cooking purposes for income generating activities.</b>		
<b>Measurement / Determination method (VVS, §§ 363-367)</b> <i>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)).</i>	/MR/	<i>Description:</i>	OK	OK
	/BUS/	The parameter monitors the saved time by the women for not collecting biomass for other income generating purpose.		
	/TA/	The data is derived from the usage survey conducted by an independent 3 <sup>rd</sup> party.		
	/VPADD			

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<b>Checklist Item</b> (incl. guidance for the verification team)	<b>Reference</b>	<b>Verification Team Comments</b> (Means and results of assessment)	<b>Draft Concl.</b>	<b>Final Concl.</b>
<p><i>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.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the VPADD and the applied methodology.</i></p>	/IM02/ /LHH/	<div> <div>During this monitoring period, the reported data is 26.6% of the women utilise the saved time for other income generating activities.</div> <div> <b>Verifier's action:</b>  The usage survey report and records were verified.  Onsite and telephone interview households informed they are able to do other activities with the time spend.  From the interview, 71% of the households have more time to carry out other income generating activities. </div> <div> <b>Conclusion:</b>  The monitoring of the indicator is consistent with the approved Transition Annex and approved revised VPA-DD </div> <div> <input type="checkbox"/> In this context the following findings have been raised: <div> <input type="checkbox"/> <input type="checkbox"/> </div> </div> </div>		

## Appendix 6. Calibration dates and validity of weighing scale

**Table A-6:** Periodic Verification Checklist – Calibration details

Monitoring equipment	Related monitoring parameter as per applicable registered monitoring plan	Serial number	Type	Accuracy or accuracy class	Previous calibration date	Current Calibration date(s)	Validity of calibration	Delay in calibration: yes/no	Period of delayed calibration
Weighing Scale	KPT / PFT	1 & 2	NA	500g & 1,000g	NA	30/07/2019	NA	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	NA