TEMPLATE

DEVIATION REQUEST FORM

PUBLICATION DATE **11.04.2021**

Version **5.0**

A. To be completed by Gold Standard

1| Decision

1.1 | Date – 30/06/2023

1.2 | Decision

The deviation request is not approved.

In the registered VPA DD of the project, the project developer has described the approach for measurement of the electricity consumption on page 63 and 64:

"Direct measurement method will be used. The project developer will use an appropriate instrument to determine the electricity consumption. The monitoring of quantity of electricity consumed by project activity is determined by conducting 3-day consecutive kitchen performance test in which the energy meter will be fixed to the device to monitor the consumption of electricity for entire day. On the second day, record the final reading before start the cooking. This will be repeated for the third day. The fourth day the final reading will be captured. The average reading of three days provided the consumption

of electricity per day. The measurement for three days will then be extrapolated for the entire y"

The project developer shall follow the approach in the registered monitoring plan and a further approval is not required as there is no design change from project developer's description below.

Data / Parameter Unit	$EG_{p,d,y}$ MWh/yr
Description	Quantity of electricity consumed by the project electricity consumption source j in year y
Source of data	Calculated
Value(s) applied	110 (for PDD ex-ante estimation)
Measurement methods and procedures	Direct measurement method will be used. The project developer will use an appropriate instrument to determine the electricity consumption. The monitoring of quantity of electricity consumed by project activity is determined by conducting 3-day consecutive kitchen performance test in which the energy meter will be fixed to the device to monitor the consumption of electricity for entire day. On the second day, record the final reading before start the cooking. This will be repeated for the third day. The fourth day the final reading will be captured. The average reading of three days provided the consumption of electricity per day. The measurement for three days will then be extrapolated for the entire year. As a cross-check approach, this parameter may be calculated by multiplying wattage of the electric cooking unit with the average number of hours product is used in a year, which will be captured during the monitoring survey. A user will be given a log to record the time of operation in a day for a period of three days similar to

	project KPT surveys. This will help determine the average number of hours ($H_{p,y}$) product is used in a year (pro-rated from three-day study). If the PP chooses the direct measurement method, there is no requirement of measuring $H_{p,y}$ and use of rated wattage.
Monitoring frequency	Annual
QA/QC procedures	-
Purpose of data	To calculate project emissions
Additional comment	The details of calculation are given in ER calculation sheet. The measurements are conservative as it assumes rated wattage of the device based on maximum operational function.

Data / Parameter	$H_{p,y}$
Unit	Hours
Description	Project technology-hours in the project database for project scenario p through year y
Source of data	Calculated
Value(s) applied	91,250 (for Year-1 PDD ex-ante estimation)
Measurement methods and procedures	The number of hours used will be monitored based on sample basis using simple random sampling. A user will be given a log to record the time of operation in a day for a period of three days. This parameter will be calculated by total number of devices installed in a year with the average number of hours product is used in a year (pro-rated from three-day study), which will be captured during the monitoring survey.
Monitoring frequency	Annual
QA/QC procedures	-
Purpose of data	To calculate project emissions
Additional comment	5-hour operation based on pilot study by Community Carbon

The project developer shall document the deviation request, its implications, and GS' decision in the appropriate section of the Monitoring Report (for the relevant MP).

The verifying VVB shall, through appropriate means at its disposal, evaluate the project's compliance with the above-mentioned conditions and provides its opinion in the Verification Report.

SustainCert shall review both the project developer's response and the VVB's assessment/opinion of the same and take appropriate steps.

1.3 | Is this decision applicable to other project activities under similar circumstances?

No

B. To be completed by the Project Developer/Coordinating and Managing Entity and/or VVB requesting deviation (Submit deviation request form in Microsoft Word format)

2| Background information

Deviation Reference Number	DEV_415	
Date of decision	30/06/2023	
Precedent (YES/NO)	No	
Precedent details	NA	
Date of submission	15/05/2023	
Project/PoA/VPA	Project	ID – GSXXXX
	☐ PoA	ID – GSXXXX
	☒ VPA	ID – GS10967
Project/PoA/VPA title	Community Carbon Efficient Cooking Programme - VPA1 (10967) in the PoA - 10963	
Date of listing	07/01/2021	
GS Standard version applicable	GS4GG	
Date of transition to GS4GG (if applicable)	NA	
Date of transition to Gold Standard from another standard (e.g. CDM) (if applicable)	NA	
Date of design certification/inclusion (if applicable)	25/11/2021	
Location of project/PoA/VPA	Uganda	
Scale of the project/PoA/VPA	☐ Microscale ☐ Small scale ☒ Large scale	
Gold Standard Impact Registry link of the project/PoA/VPA	https://registry.goldstandard.org/projects/details/2926	
Status of the project/PoA/VPA	☐ New ☐ Listed ☐ Certified design ☒ Certified project	
Title/subject of deviation	Requesting approval for electricity measurement approach to monitor electricity consumption in electric pressure cooker	

Specify applicable rule/requirements/methodology, with exact paragraph reference and version number	Technologies and Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC), version 03.1
Specify the monitoring period for which the request is valid (if applicable)	Start date: 1 Dec 2021 End date: 31 Dec 2022
Submitted by	Contact person name: Ananth Karthik Rajagopalan Email ID: anantha@upenergygroup.com
	Organisation: UpEnergy Group
	Project participant: Yes ☐ No ☒
Validation and Verification body (VVB opinion shall be included, where required by the applicable rules/requirements or request is submitted by the VVB).	Yes ☐ No ☒ If yes; VVB name: VVB Staff name(s):
Any previous deviations approved for the same project activity/PoA/VPA(s)?	Yes ☒ No ☐

3| Deviation detail

3.1 | Description of the deviation:

3.1.1 | Deviation detail (to be completed by Project developer):

The Gold Standard methodology "Technologies and Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC)", version 03.1 is applicable to programmes introducing technologies or practices that reduces greenhouse gas (GHG) emissions from thermal energy consumption due to burning of non-renewable woody biomass and/or charcoal for cooking.

As the VPA "Community Carbon Efficient Cooking Programme - VPA1" (GS10967) in addition to improved cookstoves also includes distribution of electric pressure cooker (EPC) which are non-metered devices, the only methodology choice is using TPDDTEC v3.1 methodology without us having to do any retrofits to the existing units. Additionally, the project was submitted and validated in September 2021 which is prior to the publication of the "Methodology for Metered & Measured Energy Cooking Devices" (published on 07/10/2021).

The metered device methodology was also revised twice over the calendar year 2022 with significant revisions on baseline monitoring for Electric pressure cookers. The latest version of the "Methodology for Metered & Measured Energy Cooking Devices v1.2" was published on 13/12/2022.

The VPA includes distribution of EPC which runs on electricity and there is a total of 634 EPCs distributed by the project developer which are non-metered devices until end of 2022.

In the project scenario, it is critical to measure the emissions from electricity consumption. Since the distributed EPCs do not have a metered provision for continuous monitoring of electricity consumption, the methodology "Metered & Measured Energy Cooking Devices" cannot be applied.
Meanwhile, since the applied methodology TPDDTEC version 3.1 doesn't have provision for the calculation of electricity consumption by EPC, equation from CDM Tool 5 "Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation" version 3.0 has been proposed to calculate the project emission from electricity consumption. The applicable equation from the CDM tool 5 is as follows:

$$PE_{EC,y} = \sum_{j} EC_{PJ,j,y} \times EF_{EF,j,y} \times (1 + TDL_{j,y})$$

Where,

$PE_{EC,y}$	Project emissions from electricity consumption in year y (tCO_2/yr)
$EC_{PJ,j,y}$	Quantity of electricity consumed by the project electricity consumption source j in year y (MWh/yr)
$EF_{EF,j,y}$	Emission factor for electricity generation for source j in year y (tCO_2/MWh)
$TDL_{j,y}$	Average technical transmission and distribution losses for providing electricity to source j in year y

The notation from the above equation has been modified to represent the electricity consumption from electric pressure cooker. The equation used in the design certified VPA DD is as follows:

$PE_y = \sum_d EG_{p,d,y} \times EF_{el,y} \times (1+TDLj,y)$

Where,

PE_y	Project emissions from electricity consumption in year y (tCO_2/yr)
$EG_{p,d,y}$	Quantity of electricity consumed by the project device d in year y (MWh/yr)

$EF_{el,y}$ Emission factor for electricity system in year y (tCO_2/MWh)

$TDL_{j,y}$ Average technical transmission and distribution losses for providing electricity to source j in year y

Several Gold Standard registered projects have drawn equations which are not part of the methodology. For example, there is a design certified project under Gold Standard GS ID 11239 "Shangrao Swine Farm Animal Manure Management System GHG Mitigation Project" which uses ACM0010 GHG emission reductions from manure management systems (Version 08.0) and is drawing equations from several CDM tools such as Tool 2, Tool 5, Tool 6 etc.

TPDDTEC version 3.1 already has a provision for fuel/unit measurement both in the baseline or project scenario using Kitchen Performance Test (KPT) which is detailed in Annex 4 of the methodology. Referring to the Annex 4 - Kitchen Performance Test of the methodology, "*The principles of the KPT also apply to performance testing of other decentralized energy-saving devices. This annex and associated KPT guidelines may be used as a preliminary guide to field performance tests (FTs) for the other technologies. Proponents of other decentralized thermal energy technologies may adapt these principles appropriately to achieve accurate and conservative results*.", we infer that KPT can be used for any type of fuel measurement not only biomass (in this case electricity). The same principle and procedure will be adopted for measuring the electricity consumption in electric pressure cooker. Additionally, all the best practices listed in Appendix 4 will also be followed.

Thus, for cooking practices 3-day measurement following the best practices and extrapolation are proposed as an acceptable approach. UpEnergy hereby seeks GS approval for this approach and acceptance of use of KPT for electricity consumption measurement for the second monitoring period of VPA 1 using TPDDTEC v3.1 methodology for Electric pressure cookers.

In applying this deviation, UpEnergy has adhered to the following core GS principles:
Environmental integrity: This deviation will not result in any over-estimation of GS VERs.
Contribution to Sustainable Development Goals (SDGs): The SDG contribution achievable will be in line with GS4GG requirement and will not be compromised
Safeguarding principles and Requirements: Safeguarding Principles Assessment carried out for the VPA are in line with GS4GG requirements.

Compliance with host country regulations: The scope of this deviation work does not conflict with host country regulations.

3.1.2 | VVB opinion (to be completed by VVB, if applicable):

NA

3.2 | Assessment of the deviation:

3.2.1 | Deviation assessment (to be completed by Project developer):

The approach requested above which is using Kitchen Performance Test for measurement of electricity consumption by electric pressure cooker in the project scenario complies with the requirements detailed in Annex 4 of the applied methodology TPDDTEC version 3.1. Since the electricity will be measured directly using a calibrated energy meter (direct measurement) and the principles & procedure of KPT will be applied during the 3-day electricity consumption measurement, accuracy, completeness and conservativeness of the data are ensured.

3.2.2 | VVB opinion (to be completed by VVB, if applicable):

NA

3.3 | Impact of the deviation:

3.3.1 | Impact assessment (to be completed by Project developer):

There is no impact on the project design, safeguarding principles, SDG assessment, Emission reductions, monitoring frequency, data quality, potential risk or any other aspects of the project due to this deviation. The VPA will abide by the Programme of Activity requirements version 2.0 and other relevant Gold Standard requirements.

3.3.2 | VVB opinion (to be completed by VVB, if applicable):

NA

3.4 | Documents:

NA

Version number	Release date	Description
5	11.04.2022	Additional information added: - date of listing, design certification, transition - standard version - specific reference to a requirement deviated from - any previous deviations/design changes approved Guidance on VVB opinion
4	14.01.2021	
3	16.07.2020	
2	03.05.2018	
1	01.07.2017	Initial adoption