



Gold Standard[®]
for the Global Goals

TEMPLATE

KEY PROJECT INFORMATION & PROJECT DESIGN DOCUMENT (PDD)

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VERSION **v. 1.2**

RELATED SUPPORT

- TEMPLATE GUIDE Key Project Information & Project Design Document v.1.2

This document contains the following Sections

Key Project Information

Q – Description of project

Q – Application of approved Gold Standard Methodology (ies) and/or demonstration of SDG Contributions

Q – Duration and crediting period

Q – Summary of Safeguarding Principles and Gender Sensitive Assessment

Q – Outcome of Stakeholder Consultations

Appendix 1 – Safeguarding Principles Assessment (mandatory)

Q – Contact information of Project participants (mandatory)

Q – LUF Additional Information (project specific)

Q – Summary of Approved Design Changes (project specific)

KEY PROJECT INFORMATION

GS ID of Project	
Title of Project	Household biogas plants in selected districts of Assam
Time of First Submission Date	
Date of Design Certification	
Version number of the PDD	1.0
Completion date of version	24/03/2021
Project Developer	Value Network Ventures Advisory Services Pte. Ltd
Project Representative	Mr. Sandeep Roy Choudhury
Project Participants and any communities involved	Biogas Service Center
Host Country (ies)	India
Activity Requirements applied	<input checked="" type="checkbox"/> Community Services Activities <input checked="" type="checkbox"/> Renewable Energy Activities <input type="checkbox"/> Land Use and Forestry Activities/Risks & Capacities <input type="checkbox"/> N/A
Scale of the project activity	<input type="checkbox"/> Micro scale <input checked="" type="checkbox"/> Small Scale <input type="checkbox"/> Large Scale
Other Requirements applied	
Methodology (ies) applied and version number	AMS-I.E, version 11
Product Requirements applied	<input checked="" type="checkbox"/> GHG Emissions Reduction & Sequestration <input type="checkbox"/> Renewable Energy Label <input type="checkbox"/> N/A
Project Cycle:	<input type="checkbox"/> Regular <input checked="" type="checkbox"/> Retroactive

Table 1 – Estimated Sustainable Development Contributions

Sustainable Development Goals Targeted	SDG Impact (defined in B.6.)	Estimated Annual Average	Units or Products
13 Climate Action (mandatory)			

SECTION A. DESCRIPTION OF PROJECT

A.1 Purpose and general description of project

>>The project activity involves bundling 5,000 household biogas plants located in rural parts of Assam in India commissioned from March 2020 onwards. The biogas plants are primarily deenbandhu model. The project biogas plant replaces commonly used inefficient wood fired mud stoves thereby replacing firewood consumption.

The household biogas plants utilize cattle dung in the digester for the production of biogas which is burnt in gas stoves for household cookings. This leads to reduction of greenhouse gas emissions by displacing conventionally used non-renewable biomass with renewable biogas. In addition, the hygienic conditions in the rural areas will be improved by an appropriate disposal of waste. Further, residue from the bio digesters can be used as organic fertilizer and will improve soil fertility in rural areas.

Project activity will contribute towards sustainable development by replacing firewood with biogas generated from the biodigesters.

A.1.1. Eligibility of the project under Gold Standard

>> As per section 4.1.3 of GS4GG Principles & Requirements version 1.2 of October 2019 'A Project type is automatically eligible for Gold Standard Certification if there are Gold Standard published Activity Requirements and/or Gold Standard Approved Methodologies associated with it or as referenced in Gold Standard Product Requirements'.

The project falls under GG4GG Community Services Activity Requirements as described below:

Eligible Project Types & Scope:

The projects leads to climate change mitigation by providing access to resources (biogas) to households.

Types of project: The project falls under 'Renewable energy' type: Waste management and handling: Management of animal waste (cattle dung) to deliver biogas.

Project Area, Boundary and Scale:

Project Area and Boundary is described under section A.4 below.

Scale: The project falls under waste handling and disposal with emission reductions 19,040 tCO₂ with installed energy output of 1.75 MW_{thermal} (Below the threshold of 45 MW_{thermal}). Hence, the project falls under small scale projects.

The project activity as a whole or any project digester is not part of any other registered carbon credit project (such as CDM, VCS etc.) project. This is confirmed through end user agreement and can be cross checked from publicly available sources such as UNFCCC, VCS etc.

A.1.2. Legal ownership of products generated by the project and legal rights to alter use of resources required to service the project

>>Implementation of the proposed project doesn't involve any activity that causes alteration of any resource; therefore, acquiring any specific legal right to do so is not applicable. However, the entitlement of the emission reductions generated by the project shall be transferred to the project developer from the beneficiary households through a signed covenant.

A.2 Location of project

>> Host country: India

State/Region/Province: Assam

City/Town/community etc.: In the districts of Kokrajhar, Karbi Anglong, Bongaigaon, Baksa and Karimganj

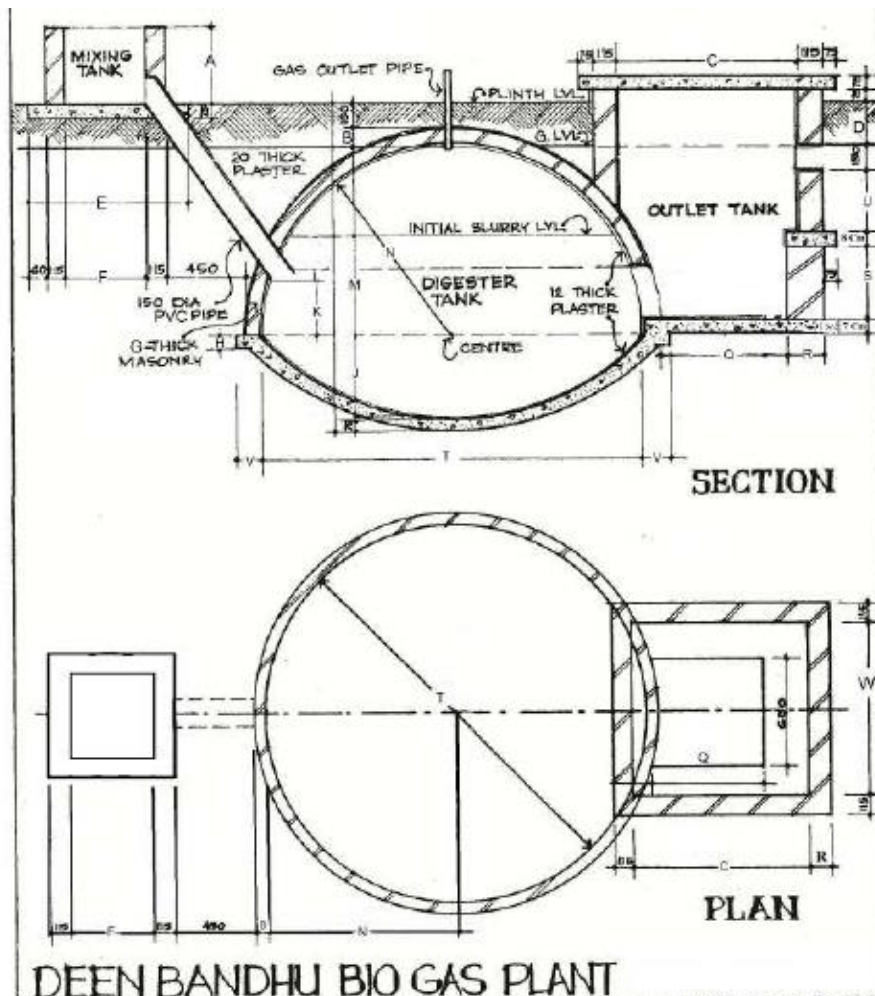
A.3 Technologies and/or measures

>> The household bio-digesters involved in the project activity are of Fixed -dome Digester technology (Deenbandhu model) of 3m³ size. The major feed cattle dung is mixed with water and fed into the plant through the inlet chamber of the plant. This waste is converted into biogas with the help of a special type of anaerobic bacteria. The digested material, which comes out of the plant, is enriched manure.

Deenbandhu Model (Fixed Dome):

The main feature of a Deenbandhu biogas plant is the fixed underground digester chamber, constructed with a layer of bricks and an additional layer of cement mortar

forming the roof above. Connected to the underground chamber is an inlet tank , through which manure is fed into the plant. The manure then ferments separating the slurry from the methane gas which rises and collects at the top of the digester tank, and is released through the gas outlet pipe. The slurry passes into the outlet tank where it is ejected from the plant and can be used as fertilizer on the field.



A.4 Scale of the project

>>The project falls under waste handling and disposal with emission reductions of 19,040 tCO₂ per annum with installed energy output of 1.75 MW_{thermal} (below the threshold of 45 MW_{thermal}). Hence, the project falls under small scale projects.

A.5 Funding sources of project

>> No public funding from parties included in Annex I to the UNFCCC, is available to the project. No Official Development Assistance involves in the project activity. The cost of bio-digesters are born by users.

SECTION B. APPLICATION OF APPROVED GOLD STANDARD METHODOLOGY (IES) AND/OR DEMONSTRATION OF SDG CONTRIBUTIONS

B.1. Reference of approved methodology (ies)

>> Methodology : AMS-I.E - Switch from non-renewable biomass for thermal applications by the user

Version : Version 11.0

Reference:

<https://cdm.unfccc.int/methodologies/DB/CU5MMCFAZCZKDP0V9DYAS7VQ56OBJW>

B.2. Applicability of methodology (ies)

>>

Conditions	Applicability
<p>Project participants are able to show that non-renewable biomass has been used in the project region since 31 December 1989, using survey methods or referring to published literature, official reports or statistics.</p>	<p>The forest cover of India has decimated from nearly 40% of India’s geographical area a century ago to 22% in 1951 and to 20.55% in 2001¹. This indicates that large-scale deforestation is prevalent since 1989. Furthermore, it may be noted as per data (tables T1 and T11) from the Global Forest Resources Assessment 2010 (FRA2010) that the wood removals (Industrial round wood removals + Wood fuel removals) have increased 23.56% from (35,055,000+ 213,169,000 = 248,224,000) cubic meters in 1990 to (45,957,000+260,752,000=306,709,000) cubic meters in 2005. State of Forest Report (FSI) report in 1987 i.e., prior to 1989 clearly states for India that the</p>

¹ State of Forest Report 2001

	<p>firewood consumption in 1987 is estimated at 157 million tonnes or 235 million cu.m². However, the production of firewood from forests estimated by FSI (Forest Survey of India) is only 40 million cu.m³. Thus, there was a gap of 195 million cu.m. in demand and production of firewood. Thus it is established that non-renewable biomass has been used in India since 31 December 1989, using official reports of the Government of India.</p>
<p>In the case that technologies using renewable biomass are used under the project activity, this methodology is applicable where all emissions related to processing of biomass are fully accounted for and biomass is sourced from biomass residues and/or a dedicated plantation of the CDM project activity, meeting the following conditions:</p> <p>(i) For projects that use biomass residues, prior to the implementation of the project activity, the biomass residues have not been collected and used but been left for decay and would, in the</p>	<p>Biomass is not used in the project activity. Hence, the conditions are not applicable.</p>

² <http://www.fsi.nic.in> (page 46; section 3.7)

³ <http://www.fsi.nic.in> (page 46; section 3.8)

<p>absence of the project activity, continue to be left for decay; and</p> <p>(ii) For projects that use biomass residues from a production process (e.g. production of sugar or wood panel boards), the implementation of the project does not result in an increase of the processing capacity of raw input (e.g. sugar, rice, logs, etc.) or in other substantial changes (e.g. product change) in this process; and</p> <p>(iii) The biomass used by the project facility is not stored for more than one year; and</p> <p>(iv) In the case biomass from dedicated plantations are used, the applicability conditions of TOOL16 "Project and leakage emissions from biomass" are satisfied.</p>	
<p>For electric cookstoves with integrated renewable energy device or with grid connected renewable energy system employing net metering, project participants shall</p>	<p>The project does not involve any electric cookstove and hence the condition is not applicable for the project.</p>

<p>demonstrate that, on an annual basis, at least 80% of the electricity generated is consumed by the electric cook stoves (i.e. 20% or less of electricity is consumed by other loads connected).</p>	
<p>For electric cook stoves, in all cases under paragraph 2(d) above where back-up diesel generators are used, this methodology is only applicable when no more than 1% of total electricity supply occurs from back up diesel generators on an annual basis.</p>	<p>The project does not involve any electric cookstove and hence the condition is not applicable for the project.</p>
<p>Under this methodology, emission reductions cannot be claimed only due to fuel-switch aspect and proposed project activities shall introduce new renewable energy based technologies, i.e. technology switch is also involved.</p>	<p>The project involves technology switch from conventional cooking system to biogas based cooking system. Hence, applicability condition is justified.</p>
<p>The methodology is applicable for technologies displacing use of non-renewable biomass by renewable energy</p>	<p>Project activity involves installation of biodigesters and biogas thus produced will displace the use of non renewable biomass to major extent. Therefore, condition is justified.</p>
<p>Project participants shall describe in the PDD/PoA-DD the proposed method for distribution of project devices and how the double counting of emission reductions has been addressed, for example, using methods such as unique identifications of product and end-user locations (e.g. programme logo),</p>	<p>As in when a digester is commissioned and agreed for joining the project, a unique id is allotted and end user agreement is executed to avoid any double counting.</p>

to prevent double counting of emission.	
For project activities introducing bio-ethanol cookstoves, project participants shall demonstrate that the bioethanol cookstoves are designed, constructed and operated to the requirements (e.g. with regard to safety) of a relevant national or local standard or comparable literature. Latest guidelines issued by a relevant national authority or an international organisation may also be used.	The project activity does not involve any bio-ethanol cookstoves. Hence, applicability condition is not applicable.

B.3. Project boundary

>>The project boundary is the physical, geographical site of the use of biomass or the renewable energy. Therefore, the project boundary encompasses the sum of all the 5,000 physical geographical sites of all individual biogas plants (digester system, pipe leading to the stove and the stove itself) realized by the project activity.

Source	GHGs	Included?	Justification/Explanation
Baseline	Firewood CO ₂	Yes	The major source of emissions in the baseline due to burning of firewood.
	CH ₄	No	Excluded for simplification, this is conservative
	N ₂ O	No	Not applicable for the project activity
Project	Firewood CO ₂	Yes	Project emissions from continued use of fire-wood shall be accounted
	CH ₄	No	Not applicable for the project activity
	N ₂ O	No	Not applicable for the project activity

B.4. Establishment and description of baseline scenario

>> As per "AMS I.E- Switch from non-renewable biomass for thermal applications by the user, Version 11 'the baseline scenario would be the use of fossil fuels for meeting similar thermal energy needs'.

The project activity involves the installation of anaerobic biodigesters for the production of biogas which replaces non-renewable biomass, used as a fuel for household cooking purposes. A baseline survey has been done to estimate the average firewood consumption prior to project activity at user point following sampling standard as per UNFCCC 'Sampling and surveys for CDM project activities and programmes of activities' version 07 and guideline 'Sampling and surveys for CDM project activities and programmes of activities' version 04.

A simple random sampling approach has been applied as the target population are of homogeneous nature. In common practice fire-wood is used for household cooking purposes in India. In Assam 72% of rural population depends on fire-wood for cooking purpose. This is also established as part of the project specific survey. All surveyed users used firewood as fuel for domestic needs. Therefore, fire-wood in absence of the project biogas is the baseline scenario. Other fuel options like LPG and coal are not economic compared to easily available firewood. Cattle dung is not a suitable option compared to firewood, as dung is used as manure in cultivation fields and to use as fuel it needs specific preparation which needs time, drying place etc. Therefore, the most suitable option is firewood. The project targets only those users who uses firewood as fuel.

The baseline survey was done by a third party covering various districts of Assam in August 2018. Below details are provided related to baseline survey:

Survey design: The household's survey was done to identify the different parameters of interest. Kitchen Performance Test (KPT) was done to identify the baseline fuel-wood consumption.

Sampling Design: The survey was implemented with the objective to assess the fuel-wood consumption and number of castles specifically to know the feasibility for the

biogas technology promotion. GS Methodology “Technologies and Practices to Displace Decentralized Thermal Energy Consumption” was followed for minimum sample size.

COV	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
90/10 precision	12	26	45	70	101	137	179	226	279

For the survey, the desired 90/10 confidence/precision has been taken. For this, sample to be taken for the survey is 101 samples as per table above. Sample is also calculated using Guidelines for Sampling and Survey for CDM project Activities and Program of Activities”. The sample calculation for the mean value parameters for 90/10 confidence/precision is as follows:

$$n \geq \frac{1.645^2 NV}{(N-1) \times 0.1^2 + 1.645^2 V}$$

The target population considered 13000 households in rural areas of Assam in different districts. Simple random sampling has been followed as the nature of rural households in Assam is almost similar. Considering the Coefficient of Variance as 0.6 and the number of population as 13000 households, the number of samples required is calculated as n=97. Since the table above provides the number of sample as 101, the 101 households are taken as sample households for KPT and survey conservatively. Out of the households identified using traditional cook-stoves in rural areas of Assam, 101 samples were randomly taken. A total of 101 households were visited for the survey in different 22 districts taken randomly from the list of potential 13000 households. A random function was used to select the sample randomly.

Results:

Baseline Fuel type:

Sl.No.	Types of fuel	Response	
		Number	Percentage
1	Firewood	101	100%
2	Agri-residue	0	0
3	LPG	0	0
4	Others	0	0

Fuel consumption kg/day/household:

Sl.No.	Days	Quantity in kg	Standard Deviation
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1	Day-1	11.42	0.94
2	Day-2	11.65	0.91
3	Day-3	11.53	0.80
	Total (Mean)	11.53	0.91

B.5. Demonstration of additionality

<p>Specify the methodology, activity requirement or product requirement that establishes deemed additionality for the proposed project (including the version number and the specific paragraph, if applicable).</p>	<p>The project falls under GG4GG Community Services Activity Requirements. As per Annex-B Positive list under 'GG4GG Community Services Activity Requirements' the project meets the criteria 3 'Project activities solely composed of isolated units where the users of the technology/measure are households or communities or institutions and where each unit results in <= 600 MWh of energy savings per year or <=600 tonnes of emission reductions per year'.</p>
<p>Describe how the proposed project meets the criteria for deemed additionality.</p>	<p>Considering a biogas plant can save around 4.20 tonne/year of firewood which is used for cooking in baseline, the emission reduction as per applied methodology (AMS-I.E, version 11) is calculated as below:</p> $B_y = N_{HH} \times (BC_{BL,HH,y} - BC_{PJ,HH,y})$ <p>Where,</p> <p>B_y = Quantity of woody biomass that is substituted or displaced in tonnes</p> <p>N_{HH} = Number of households in the project activity, number. It is considered 1 considering a single unit.</p> <p>$BC_{BL,HH,y}$ = Average annual consumption of woody biomass per household before the start of the project activity, tonnes/household/year 4.2 tonnes/HH/year is considered.</p> <p>$BC_{PJ,HH,y}$ = If it is found that pre-project devices were not completely displaced but continue to be</p>

	<p>used to some extent, average annual consumption of woody biomass per household in the pre-project devices during the project activity, tonnes/household/year. It is considered conservatively that entire firewood is replaced.</p> <p>$B_y = 1 * (4.20 - 0)$ $= 4.20$ tonnes</p> <p>Therefore, emission reduction is</p> <p>$BE_y = B_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected_fossil_fuel}$</p> <p>$= 4.2 * 100\%$ (most conservative value) $* 0.0156 * 64.4$ $= 4.22$ tCO₂per year</p> <p>Therefore, with conservative assumptions, the emission reduction for an individual unit is far below 600 tonnes of emission reduction per year. Hence, the proposed project activity falls under the 'Positive List' and hence under Principle 5 – Financial Additionality & Ongoing Financial Need, the project is considered deemed additional.</p>
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B.5.1 Prior Consideration

>>As per GS4GG rule for retroactive projects, project documents need to submit to GS within one year of the project start date to meet prior consideration. Only biogas plants commissioned from one year prior to GS submission shall be considered.

B.5.2 Ongoing Financial Need

>> Ongoing Financial Need shall be demonstrated at Design Certification Renewal (Refer clause 3.5.2.2 of GS4GG 'principle and requirements').

B.6. Sustainable Development Goals (SDG) outcomes

Relevant Target/Indicator for each of the three SDGs

Sustainable Development Goals Targeted	Most relevant SDG Target	SDG Impact

		Indicator (Proposed or SDG Indicator)
13-Climate Action (mandatory)	SDG target (13.2)- Integrate climate change measures into national policies, strategies and planning	Amount of emission reductions achieved from the project activity.
7-Affordable and clean energy	SGD targets: 7.1- By 2030, ensure universal access to affordable, reliable and modern energy services 7.2- By 2030, increase substantially the share of renewable energy in the global energy mix	7.1.2-Proportion of population with primary reliance on clean fuels and technology
3-Good health and well being	SDG target 3.9- By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.	3.9.1 -Mortality rate attributed to household and ambient air pollution.

B.6.1 Explanation of methodological choices/approaches for estimating the SDG Impact >> SDG 13:

As per "AMS I.E- Switch from non-renewable biomass for thermal applications by the user, Version 11, the baseline emissions (BE_y) are calculated as:

$$BE_y = B_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected_fossil_fuel}$$

Where,

BE_y = Baseline emissions during the year y in t CO₂e

B_y = Quantity of woody biomass that is substituted or displaced in tonnes

f_{NRB,y} = Fraction of woody biomass used in the absence of the project activity in year y that can be established as non-renewable biomass (f_{NRB})

NCV_{biomass} = Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.0156 TJ/tonne)

$EF_{\text{projected_fossilfuel}}$ = Emission factor for the substitution of non-renewable woody biomass by similar consumers. Use a value of 64.4 tCO₂/TJ for South Asia.

B_y is determined by using option (a) paragraph 29 (a) of the methodology as follows:

‘Calculated as the product of the number of households multiplied by the estimate of average annual consumption of woody biomass per household that is displaced by the project activity (tonnes/household/year)’;

$$B_y = N_{HH} \times (BC_{BL,HH,y} - BC_{PJ,HH,y})$$

Where,

N_{HH} = Number of households in the project activity, number

$BC_{BL,HH,y}$ = Average annual consumption of woody biomass per household before the start of the project activity, tonnes/household/year

$BC_{PJ,HH,y}$ = If it is found that pre-project devices were not completely displaced but continue to be used to some extent, average annual consumption of woody biomass per household in the pre-project devices during the project activity, tonnes/household/year

$BC_{BL,HH,y}$ has been determined as per third party survey for the sample of households explained in section B.4 above.

Fraction of woody biomass used in the absence of the project activity in year y that can be established as non-renewable biomass ($f_{NRB,y}$) is determined as per methodological tool ‘Calculation of the fraction of non-renewable biomass’ version 03 as follows:

The fraction of woody biomass that can be established as non-renewable, is:

$$f_{NRB} = \frac{NRB}{NRB + RB}$$

Where:

f_{NRB} = Fraction of non-renewable biomass (fraction or %)

NRB = Quantity of non-renewable biomass (t/yr)

RB = Quantity of renewable biomass (t/yr)

The quantity of non-renewable biomass consumed in the applicable area (NRB) shall be determined as the difference between the total consumption of woody biomass in the applicable area (H) and the quantity of renewable biomass that can be sustainably harvested in the applicable area (RB):

$$NRB = H - R$$

Where: H = Total consumption of woody biomass in the applicable area in the relevant period (tonnes).

The total consumption of woody biomass (H) is calculated using the following equation, accounting for all consumption within the applicable area (not only wood fuel but also timber and industrial consumption):

$$H = HW \times N + CE + N$$

Where:

HW = Average consumption of wood fuel per household, including fuelwood and charcoal, in the applicable area in the relevant period (tonnes//household)

CE = Commercial woody biomass consumption for energy applications (e.g. commercial, industrial or institutional uses of woody biomass in ovens, boilers etc.) that are extracted from forests or other land areas in the applicable area in the relevant period (tonnes)

NE = Commercial woody biomass consumption for non-energy applications (e.g. construction, furniture) that are extracted from forests or other land areas in the applicable area in the relevant period (tonnes)

N = Number of households consuming wood fuel within the applicable area in the relevant period (number)

Following paragraph 15 of the tool 'For the parameters HW and N, an aggregated value ($HW \times N$) may be used in the calculation, if official statistics provide total household wood fuel consumption ($HW \times N$)', Forest Survey of India report 2011, Annual fuelwood consumption in household sector and consumption of wood in House construction, Furniture and Agriculture is given below:

States	Assam
Annual woodfuel consumption in household sector (Tonne/year)	13910000
Non-domestic wood consumption (tonne/year)	26449750
Total wood consumption (tonne/year)	40364750

Procedure to estimate RB:

Renewable biomass (RB) in the country/region/area is estimated using the equation below:

$$RB = \sum (MAI_{forest,i} \times (F_{forest,i} - P_{forest})) + \sum (MAI_{other,i} \times (F_{other,i} - P_{other}))$$

Where:

$MAI_{forest,i}$ = Mean Annual Increment of woody biomass growth per hectare in subcategory i of forest areas (t/ha/yr). For this parameter report from report from publicly available research paper is used.

$F_{forest,i}$ = Extent of forest in sub-category i (ha). India state of of forest report, 2019 has been referred for this parameter.

$MAI_{other,i}$ = Mean Annual Increment of woody biomass growth per hectare in subcategoryi of other wooded land areas (t/ha/yr). This data is not available and hence not used.

$F_{other,i}$ = Extent of other wooded land in sub-category i (ha). This data is not available and hence not used.

P_{forest} = Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within forest areas (ha). This data is not available and hence not used.

P_{other} = Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within other wooded land areas (ha). This data is not available and hence not used.

i = Sub-category i of forest areas and other wooded land areas. This data is not available and hence not used.

State	Assam
$MAI_{forest,i}$	0.974
$F_{forest,i}$	1853000
RB	1904822

Accordingly, the fNRB would be:

State	H	RB	NRB (H-RB)	fNRB
Assam	40364750	1904822	38459928	95%

Project Emissions (PEy):

As per applied methodology AMS-I.E, version 11, project emissions are accounted for below activities:

CO2 emissions from on-site consumption of fossil fuels due to the project activity

CO2 emissions from electricity consumption by the project activity

Methane emission from solid waste disposal or waste water

Project emissions related to cultivation of feedstock

Project emissions from transportation

The project activity does not involve any of the above activity and hence, project emissions for the project activity is not applicable.

Leakage Emissions (LEy):

Leakage emissions (related to the non-renewable woody biomass saved by the project activity shall be assessed based on ex post surveys of users and the areas from which this woody biomass is sourced (using 90/30 precision for a selection of samples). The following potential source of leakage shall be considered: The use/diversion of non-renewable woody biomass saved under the project activity by non-project households/users that previously used renewable energy sources. If this leakage assessment quantifies an increase in the use of non-renewable woody biomass used by the non-project households/users that is attributable to the project activity, then By is adjusted to account for the quantified leakage. Alternatively, By is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which case surveys are not required.

PP has opted default option, and By shall be adjusted with adjustment factor of 0.95 to account leakage.

Emission reductions:

Emission reductions are to be estimated based on the equation below:

$$ERy = BEy - PEy - LEy$$

SDG 3: Sample survey to be applied to estimate impact of SDG 3.

SDG 7: Sample survey to be applied to estimate impact of SDG 7.

B.6.2 Data and parameters fixed ex ante

Copy the table for each piece of data and parameter; use headings to group parameter tables by SDG

SDG13

Data/parameter	$f_{NRB,y}$
Unit	Fraction
Description	Fraction of woody biomass saved by the project activity during year y that can be established as non-renewable biomass
Source of data	Calculated following requirements of Methodological tool: Calculation of the fraction of non-renewable biomass version 03
Value(s) applied	95%
Choice of data or Measurement methods and procedures	Methodological tool: Calculation of the fraction of non-renewable biomass
Purpose of data	Baseline emissions estimation
Additional comment	This value will be fixed for the crediting period and will be reviewed during renewal of crediting period

Data/parameter	$BC_{BL,HH,y}$
Unit	tonnes/household/year
Description	Average annual consumption of woody biomass per household before the start of the project activity
Source of data	Baseline survey
Value(s) applied	4.2
Choice of data or Measurement methods and procedures	<p>The survey was conducted to know the firewood consumption pattern in line with the methodology in the potential households that uses traditional cookstoves (baseline technologies).</p> <p>Survey was conducted following UNFCCC sampling standard 'Sampling and surveys for CDM project activities</p>

	and programmes of activities' version 07 and guideline 'Sampling and surveys for CDM project activities and programmes of activities' version 04. A 90% confidence interval and 10% error margin applied for sample calculation
Purpose of data	Baseline emissions estimation
Additional comment	

Data/parameter	N_{HH}
Unit	Number
Description	Number of households in the project activity in year y
Source of data	As per PP's project database
Value(s) applied	5,000
Choice of data or Measurement methods and procedures	Project database as per the commissioning reports and end user agreements
Purpose of data	Baseline emissions estimation
Additional comment	

Data/parameter	$NCV_{biomass}$
Unit	TJ/tonne
Description	Net calorific value of the non-renewable woody biomass that is substituted
Source of data	AMS-I.E, version 11
Value(s) applied	0.0156 TJ/tonne

Choice of data or Measurement methods and procedures	IPCC default for wood fuel
Purpose of data	Baseline emissions estimation
Additional comment	

Data/parameter	$EF_{projected_fossilfuel}$
Unit	tCO2/TJ
Description	Emission factor for the substitution of non-renewable woody biomass
Source of data	Default value as per AMS-I.E, version 11
Value(s) applied	64.4 tCO2/TJ
Choice of data or Measurement methods and procedures	Default value as per AMS-I.E, version 11
Purpose of data	Baseline emissions estimation
Additional comment	

B.6.3 Ex ante estimation of SDG Impact

>> SDG 13:

Baseline Emissions:

$$BE_y = B_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected_fossil_fuel}$$

Where,

$$B_y = N_{HH} \times (BC_{BL,HH,y} - BC_{PJ,HH,y})$$

	Total population (N _{HH})	Baseline firewood consumption (tonne/year/HH)-BC _{BL,HH,y}	By (ton/yr)
3 m3	5000	4.20	21,000

BC_{Pj,HH,y} (if it is found that pre-project devices were not completely displaced but continue to be used to some extent, average annual consumption of woody biomass per household in the pre-project devices during the project activity, tonnes/household/year) is considered zero during design certification stage. The same shall be monitored ex-post certification.

The fraction of woody biomass that can be established as non-renewable, is:

$$f_{NRB} = \frac{NRB}{NRB + RB}$$

Accordingly, the fNRB would be: 95%

Accordingly, BE_y would be:

$$BE_y = B_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected_fossil_fuel}$$

By	fNRB	NCV	EF	BE _y (tCO ₂ e)
Assam				
21,000	95%	0.0156	64.4	20,042

Project Emissions (PE_y): Nil as explained in section B.6.2 above.

Leakage Emissions: By is multiplied by a net to gross adjustment factor of 0.95 to account for leakages. Therefore, Leakage would be 1002 tCO₂

$$\begin{aligned} \text{Emission reductions} &= BE_y - PE_y - LE_y \\ &= 20,042 - 0 - 1,002 \\ &= 19,040 \text{ tCO}_2 \end{aligned}$$

SDG 3:

Baseline estimation	Ex-ante estimation
Prone to illness due to smoke released from burning of fire-wood	Reduction in smoke related illness due to use of biogas instead of firewood. Since, biogas is smokeless; 100% users are expected to get rid of kitchen smoke related illness.

SDG 7:

Baseline estimation	Ex-ante estimation

All users used fire-wood based cooking system which is not clean energy.	100% users are accessed to clean energy sources. This shall be monitored. It is assumed that with 100% operational status all users are accessed to clean energy source.
--	--

B.6.4 Summary of ex ante estimates of each SDG Impact

Year	Baseline estimate	Project estimate (Leakage)	Net benefit
Year 1	20,042	1,002	19,040
Year 2	20,042	1,002	19,040
Year 2	20,042	1,002	19,040
Year 4	20,042	1,002	19,040
Year 5	20,042	1,002	19,040
Total	100,213	5,011	95,200
Total number of crediting years	5		
Annual average over the crediting period	20,042	1,002	19,040

B.7. Monitoring plan

B.7.1 Data and parameters to be monitored

SDG 13

Data / Parameter	BC _{PJ,HH,y}
Unit	tonnes/household/year
Description	Average annual consumption of woody biomass per household in the pre-project devices during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent
Source of data	Survey

Value(s) applied	To be monitored
Measurement methods and procedures	Monitoring shall consist of estimation of all project devices or a representative sample thereof, at least once every two years (biennial)
Monitoring frequency	At least once every two years (biennial)
QA/QC procedures	Third party survey to be conducted following standard sampling approach
Purpose of data	Baseline Emissions estimation
Additional comment	

Data / Parameter	$N_{HH,y}$
Unit	Numbers
Description	Number of households (biogas system) in the project activity in operational per year
Source of data	Survey
Value(s) applied	To be monitored
Measurement methods and procedures	Monitoring consist of checking of representative sample, to ensure that bio-digesters operating. Calculated as $N_{HH} * P_y$, where N_{HH} is the number of biodigesters installed in the project and P_y is Proportion of Bio-digesters operational estimated based on the sample survey.
Monitoring frequency	At least once every two years (biennial)
QA/QC procedures	Third party survey to be conducted following standard sampling approach
Purpose of data	Baseline Emissions estimation
Additional comment	

SDG 3:

Relevant SDG Indicator	1 – Good health and well being (SDG 3)- Specific indicator 3.9.1
Data / Parameter	Improvement in health and decrease in illness
Unit	Qualitative

Description	Indoor air quality at usage point
Source of data	Sampling survey/annual usage survey/monitoring survey
Value(s) applied	To be monitored
Measurement methods and procedures	Improvement in health and decrease in illness will be assessed through interview with end users due to project implementation. Users opinion on indoor air quality due to biogas usage shall be collected during monitoring survey. In addition, training to the operation and maintenance technicians and field supervisors to be provided to increase awareness in safe operation and handling emergency situations.
Monitoring frequency	At least once every two years (biennial)
QA/QC procedures	Third party survey to be conducted following standard sampling approach.Publicly available data may be referred.
Purpose of data	Sustaible development assessment
Additional comment	

SDG 7:

Relevant SDG Indicator	2 – Affordable and clean energy (SDG 7)- Specific indicator 7.1.2
Data / Parameter	Access to affordable and clean energy services
Unit	Numbers
Description	Number of biogas system operational under the project activity
Source of data	Biogas User Survey
Value(s) applied	To be monitored
Measurement methods and procedures	Sample survey to confirm if project biogas systems are operational. Operational status will confirm that the users are accessed to affordable and clean energy.
Monitoring frequency	At least once every two years (biennial)
QA/QC procedures	Required sample size shall be determined following UNFCCC sampling standard
Purpose of data	Sustainable development assessment
Additional comment	

B.7.2 Sampling plan

>>

Sampling Approach:

Objectives and reliability requirements: The objective of the sampling plan is to achieve unbiased and reliable estimates of the proportion or the mean value of the key variables over the crediting period. The methodology applied for the project (AMS.I.E version 11) requires the project proponent achieving 95 percent confidence interval and a 10 percent margin of error when biennial inspection is chosen and when annual inspection is chosen 90 per cent. The table below provides the monitoring parameters that will be monitored annually:

Parameter	Type	Description
N_{HH}	Proportional parameter	Number of households (biogas system) in the project activity in operational per year
$BC_{PJ,HH,y}$	Mean value parameter	Average annual consumption of woody biomass per household in the pre-project devices during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent.

Target Population: The target population for different parameters discussed in the table above are given below:

- For the proportional parameter; the target population is the bio-digester users listed in the project database.
- For the mean value parameter; the target population is the total number of operational biogas digester for which the emission reductions will be accounted for the monitoring period in question.

Sampling frame: All the households with biogas digester within the project will be the sampling frame.

Sampling Method: A simple random sampling will be adopted for estimating the sample size for the monitoring surveys. Simple random sampling is suited to populations that are homogenous (EB 86 annex 04).

Sample Size: The calculation of the required sample size for each parameter will be calculated at 90/10 confidence/precision as required for the annual monitoring. The sample size is determined using the Guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities Ver. V4.0 (EB86, Annex 4).

Proportional Paramater (Operational status)

The minimum sample size to determine number of biogas system in operation using the procedure outlined in para 12 of appendix 1, EB 86 Annex 4, Guidelines for Sampling and Surveys for CDM Project activites and Programme of Activities Ver. 4.0.

$$n \geq \frac{1.645^2 N \times p(1 - p)}{(N - 1) \times 0.1^2 \times p^2 + 1.645^2 p(1 - p)}$$

Where:

n= Sample size

N = Total number of biogas system of type i installed under the project

p = expected proportion

1.645 = represents the 90% confidence required

0.1 = represents the 10% relative precision

Mean Value parameters (average annual consumption of woody biomass after project activity)

The minimum sample size for the monitoring parameters is determined using the equation given in para 51 of appendix 1, EB 86 Annex 4, Guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities Ver. 4.0.

$$n \geq \frac{1.645^2 NV}{(N - 1) \times 0.1^2 + 1.645^2 V}$$

Where,

V = (SD/Mean)²

n = Sample Size

N = Total number of Population

SD = Standard deviation

Mean = Mean for the average annual woody biomass consumption by pre-project device during project activity

1.645 = Represent 90% confidence required

0.1 = Represent the 10% relative precision

Out of the sample calculated above, conservative number of sample will be taken with appropriate enlargement of samples.

Data:

Field Measurements:

Checking of a representative sample of biogas system within the project to ensure that they are still operating (NHH).

The selection of households will be done using rand function in excel to generate random number and taking households from first up to the number of sample required by arranging the random number in ascending or descending order.

Determine average annual consumption of woody biomass per household in the pre-project devices during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent.

The survey will be conducted annually with the objective to target 10 percent precision and to achieve 90 percent confidence.

Quality Assurance/Quality Control:

A survey questionnaire will be prepared to seek responses of operating status (yes or no) of biogas digesters within the project activity. Users will be asked to provide their estimates on consumption of woody biomass after project activity. The survey will be performed by the project developer appointing a third party. During the survey, in order to anticipate any low response rate and answers bias, 10% oversampling will be applied.

Analysis:

The project developer will collect, compile and analyze the data to derive the number of bio-digesters within the project still operational and average firewood consumption at each bio-digester user (if any). The developer will prepare "monitoring report" based on the survey report.

Implementation:

The survey questionnaire will be prepared, pre-tested and field personnel will be trained in conducting the survey to ensure the quality of data collected and the survey will be carried out as per defined frequency covering required data information. The schedule for implementing the sampling effort shall be defined prior to the field activity

B.7.3 Other elements of monitoring plan

>>N/A

SECTION C. DURATION AND CREDITING PERIOD

C.1. Duration of project

C.1.1 Start date of project

>> 01/04/2020

C.1.2 Expected operational lifetime of project

>>15 years

C.2. Crediting period of project

C.2.1 Start date of crediting period

>>01/04/2020 or two years prior to the date of project design certification whichever is later.

C.2.2 Total length of crediting period

>> The project falls under GS community service activity and hence eligible for total 15 years issuance with certification renewal every 5 years. So the length of crediting period will be 5 year* 3 times.

SECTION D. SUMMARY OF SAFEGUARDING PRINCIPLES AND GENDER SENSITIVE ASSESSMENT

D.1 Safeguarding Principles that will be monitored

A completed Safeguarding Principles Assessment is in [Appendix 1](#), ongoing monitoring is summarised below.

Principles	Mitigation Measures added to the Monitoring Plan
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Principle x.y

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D.2. Assessment that project complies with GS4GG Gender Sensitive requirements

Question 1 - Explain how the project reflects the key issues and requirements of Gender Sensitive design and	The project respects the key gender issues and requirements of gender-
--	--

<p>implementation as outlined in the Gender Policy?</p>	<p>sensitive design and implementation of the project. SDG#5 is one of the impact areas of the project. The project is aimed to replace conventional wood fired mud stoves technology with biogas primarily for cooking. This will result in reducing use of firewood consumption or replacement of complete firewood usage at user place.</p> <p>Primarily in rural areas of India, cooking activity at household level is managed by women. Therefore, women are more exposed to the indoor air pollution and the associated hazard. Women in rural areas in most cases are also responsible for taking care of their children specially infants who need mother’s support most of the time are bound to accompany their mother in kitchen. This situation leads to enhanced exposure of the women and children to kitchen smoke and associated health consequences. Since the project aims to replace the polluting traditional cooking stoves with biogas cooking system, the primary beneficiary would be the women and children. Furthermore, the project is focused to the economically disadvantaged group of people, which also justifies the dimension of social inclusion in the project design.</p>
<p>Question 2 - Explain how the project aligns with existing country policies, strategies and best practices</p>	<p>The Government of India reaffirms its commitment to work for the realization of constitutional guarantee of equality,</p>

	<p>social justice and non-discrimination on the basis of sex, caste, community, language and religion. Ministry of women & child development, Govt. of India has taken various measures for gender equality/socio-economic development/empowerment of women. Out of these, the project positively contributes towards the national mission for empowerment of women through improvement of health and attaining vision for empowerment of women under national policy for women 2016 (Women participation will be ensured in the efficient use and spreading the use of solar energy, biogas, smokeless chulas and other technological applications to have positive influence on their life styles and a long term impact on meeting sustainable development goals)</p>
<p>Question 3 - Is an Expert required for the Gender Safeguarding Principles & Requirements?</p>	<p>N/A</p>
<p>Question 4 - Is an Expert required to assist with Gender issues at the Stakeholder Consultation?</p>	<p>N/A</p>

SECTION E. SUMMARY OF LOCAL STAKEHOLDER CONSULTATION

The below is a summary of the 2 step GS4GG Consultation for monitoring purposes.

Please refer to the separate Stakeholder Consultation Report for a complete report on the initial consultation and stakeholder feedback round.

E.1 Summary of stakeholder mitigation measures

>> Stakeholder consultation process to be conducted.

E.2 Final continuous input / grievance mechanism

Method	Include all details of Chosen Method (s) so that they may be understood and, where relevant, used by readers.
Continuous Input / Grievance Expression Process Book (mandatory)	
GS Contact (mandatory)	help@goldstandard.org
Other	

APPENDIX 1 - SAFEGUARDING PRINCIPLES ASSESSMENT

Complete the Assessment below and copy all Mitigation Measures for each Principle into [SECTION D](#) above. Please refer to the instructions in the [Guide to Completing](#) this Form.

Assessment Questions/ Requirements	Justification of Relevance (Yes/potentially/no)	How Project will achieve Requirements through design, management or risk mitigation.	Mitigation Measures added to the Monitoring Plan (if required)
Principle 1. Human Rights			
<ol style="list-style-type: none"> The Project Developer and the Project shall respect internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights The Project shall not discriminate with regards to participation and inclusion 	No	India adopted 'The protection of human rights Act' 1993 and the project is bound to follow the rules and regulation of host country. In addition, India has ratified 'International Convention on the Elimination of All Forms of Racial Discrimination :1969', 'International Covenant on Civil and Political Rights :1976', 'International Covenant on Economic, Social and Cultural Rights :1976' 'Convention on the Elimination of All Forms of Discrimination against Women :1981'.	Not applicable

		<p>Therefore, the project developer and the project do respect nationally and internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind.</p>	
<p>Principle 2. Gender Equality</p>			
<p>1. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women</p> <p>2. Projects shall apply the principles of non discrimination, equal treatment, and equal pay for equal work</p> <p>3. The Project shall refer to the country’s national gender strategy or equivalent national commitment to aid in assessing gender risks</p> <p>4. (where required) Summary of opinions and</p>	<p>No</p>	<p>1. The project happens in individual households. It does not involve any women workforce which may lead to sexual harassment.</p> <p>2. Yes. The project involves construction of biogas digesters at households. Trained labours are used for the same. Local people are engaged for the same. No discrimination either in gender or any other form is followed to engage local people.</p> <p>3. The project does not has any scope to apply gender strategy as such. Although the project positively contributes</p>	<p>Not Applicable.</p>

recommendations of an Expert Stakeholder(s)		towards the national mission for empowerment of women through improvement of health and attaining vision for empowerment of women under national policy for women 2016	
Principle 3. Community Health, Safety and Working Conditions			
1. The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community	No	The project leads to safe working condition and improvement in health as it will replace firewood as fuel with biogas which is clean and safe	Not applicable
Principle 4.1 Sites of Cultural and Historical Heritage			
Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture?	No	The project area covers households which does not have any structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture. Hence, not applicable	Not applicable
>>			
Principle 4.2 Forced Eviction and Displacement			

Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)?	No	The project activity takes place within individual households. Therefore, no relocation of people takes place.	Not Applicable
>>			
Principle 4.3 Land Tenure and Other Rights			
a. Does the Project require any change, or have any uncertainties related to land tenure arrangements and/or access rights, usage rights or land ownership? b. For Projects involving land use tenure, are there any uncertainties with regards to land tenure, access rights, usage rights or land ownership?	No	The project area covers households which does not have any structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture. Hence, not applicable	Not Applicable
>>			
Principle 4.4 - Indigenous people			
Are indigenous peoples present in or within the area of influence of the Project and/or is the Project located on land/territory claimed by indigenous peoples?	No	No. The project involves household biogas digesters. Therefore, it does not involve any influence towards indigenous people	Not Applicable

>>			
Principle 5. Corruption			
1. The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects	No	The project benefits households with clean fuel (biogas). There is no corruption provision in the project activity	Not Applicable
Principle 6.1 Labour Rights			
<p>1. The Project Developer shall ensure that all employment is in compliance with national labour occupational health and safety laws and with the principles and standards embodied in the ILO fundamental conventions</p> <p>2. Workers shall be able to establish and join labour organisations</p> <p>3. Working agreements with all individual workers shall be documented and</p>	No	The project does not require labour force for implementation of the project. Trained technicians are involved in construction and operation and maintenance of plants. Therefore, no forced labour is involved in the project. No child labour is involved	Not Applicable

<p>implemented and include:</p> <ul style="list-style-type: none"> a) Working hours (must not exceed 48 hours per week on a regular basis), AND b) Duties and tasks, AND c) Remuneration (must include provision for payment of overtime), AND d) Modalities on health insurance, AND e) Modalities on termination of the contract with provision for voluntary resignation by employee, AND f) Provision for annual leave of not less than 10 days per year, not including sick and casual leave. <p>4. No child labour is allowed (Exceptions for children working on their families' property</p>			
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<p>requires an Expert Stakeholder opinion)</p> <p>5. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures</p>			
<p>Principle 6.2 Negative Economic Consequences</p>			
<p>1. Does the project cause negative economic consequences during and after project implementation?</p>	<p>No</p>	<p>The project has lifetime of 15 years and expected to run beyond the project certification period. With carbon finance it is further strengthen to operate 100% project systems with continuous maintenance</p>	<p>Not Applicable.</p>
<p>>></p>			
<p>Principle 7.1 Emissions</p>			
<p>Will the Project increase greenhouse gas emissions over the Baseline Scenario?</p>	<p>No</p>	<p>No. The project will replace firewood use with biogas. Hence, it will reduce greenhouse gas emissions over the Baseline Scenario</p>	<p>Not Applicable</p>
<p>>></p>			

Principle 7.2 Energy Supply			
Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users?	No	No. The project uses inhouse cattle dung only	Not Applicable
>>			
Principle 8.1 Impact on Natural Water Patterns/Flows			
Will the Project affect the natural or pre-existing pattern of watercourses, ground-water and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?	No	No. Water in huge quantity is not required for the project which can impact the ground water level or any seasonal flow. Water is needed to mix with cattle dung while feeding in digester	Not Applicable
>>			
Principle 8.2 Erosion and/or Water Body Instability			
a. Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion?	No	No. Water in huge quantity is not required for the project which can impact the ground water level or any seasonal flow. Water is needed to mix	Not Applicable

b. Is the Project’s area of influence susceptible to excessive erosion and/or water body instability?		with cattle dung while feeding in digester	
>>			
Principle 9.1 Landscape Modification and Soil			
Does the Project involve the use of land and soil for production of crops or other products?	No	No. Since the project takes place in individual households, no net degradation in existing landscape function and services takes place	Not Applicable
>>			
Principle 9.2 Vulnerability to Natural Disaster			
Will the Project be susceptible to or lead to increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic conditions?	No	No. The project happens at individual households. There is no activity which can affect adversely the natural system to cause earthquake, landslides, erosion, flooding, draught or other extreme climatic conditions	Not Applicable.
>>			
Principle 9.3 Genetic Resources			
Could the Project be negatively impacted by or involve genetically modified organisms	No	Not applicable. The project does not involve any crop production or cultivation	Not Applicable

or GMOs (e.g., contamination, collection and/or harvesting, commercial development, or take place in facilities or farms that include GMOs in their processes and production)?			
>>			
Principle 9.4 Release of pollutants			
Could the Project potentially result in the release of pollutants to the environment?	No	No. The project does not release any pollutants to the environment	Not Applicable
>>			
Principle 9.5 Hazardous and Non-hazardous Waste			
Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials?	No	Not applicable. The project does not involve any production process	Not applicable
>>			
Principle 9.6 Pesticides & Fertilisers			
Will the Project involve the application of pesticides and/or fertilisers?	No	Not applicable. The project does not involve any crop production or cultivation	Not applicable
>>			

Principle 9.7 Harvesting of Forests			
Will the Project involve the harvesting of forests?	No	Not applicable. The project happens at individual households	Not applicable
>>			
Principle 9.8 Food			
Does the Project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	No	Not applicable	Not applicable
>>			
Principle 9.9 Animal husbandry			
Will the Project involve animal husbandry?	No	Not applicable	Not applicable
>>			
Principle 9.10 High Conservation Value Areas and Critical Habitats			
Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified?	No	Not applicable	Not applicable
>>			

Principle 9.11 Endangered Species			
<p>a. Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)?</p> <p>b. Does the Project potentially impact other areas where endangered species may be present through transboundary affects?</p>	No	Not applicable	Not applicable
>>			

APPENDIX 2- CONTACT INFORMATION OF PROJECT PARTICIPANTS

Organization name	Value Network Ventures Advisory Services Pte. Ltd
Registration number with relevant authority	
Street/P.O. Box	41/1, Church Street
Building	Reyyan Towers
City	Bangalore
State/Region	Karnataka
Postcode	560001
Country	India
Telephone	+91 98450 17165
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Contact person	Sandeep Roy Choudhury
Title	Director
Salutation	Mr.
Last name	Choudhury
Middle name	Roy
First name	Sandeep
Department	Emissions & Investments
Mobile	+91 98450 17165
Direct tel.	
Personal e-mail	sandeep@vnvadvisory.com

APPENDIX 3- LUF ADDITIONAL INFORMATION

Risk of change to the Project Area during Project Certification Period:	
Risk of change to the Project activities during Project Certification Period:	
Land-use history and current status of Project Area:	
Socio-Economic history:	
Forest management applied (past and future)	
Forest characteristics (including main tree species planted)	
Main social impacts (risks and benefits)	
Main environmental impacts (risks and benefits)	
Financial structure	
Infrastructure (roads/houses etc):	
Water bodies:	
Sites with special significance for indigenous people and local communities - resulting from the Stakeholder Consultation:	
Where indigenous people and local communities are situated:	
Where indigenous people and local communities have legal rights, customary rights or sites with special cultural, ecological, economic, religious or spiritual significance:	

APPENDIX 4-SUMMARY OF APPROVED DESIGN CHANGES

Please refer to Design Change [Requirements](#) for more information on procedures governing Design Changes

Revision History

Version	Date	Remarks
1.2	14 October 2020	Hyperlinked section summary to enable quick access to key sections Improved clarity on Key Project Information Inclusion criteria table added Gender sensitive requirements added Prior consideration (1 yr rule) and Ongoing Financial Need added Safeguard Principles Assessment as annex and a new section to include applicable safeguards for clarity Improved Clarity on SDG contribution/SDG Impact term used throughout Clarity on Stakeholder Consultation information required Provision of an accompanying Guide to help the user understand detailed rules and requirements
1.1	24 August 2017	Updated to include section A.8 on 'gender sensitive' requirements
1.0	10 July 2017	Initial adoption