

#### Validation report form

## (Version 02.0)

Complete this form in accordance with the "Attachment: Instructions for filling out the validation report form for CDM project activities" at the end of this form.

VALIDA	ATION REPORT
Title of the project activity	Solar DC programme in off-grid regions in India (GS 7467_GS4GG)
Version number of the validation report	03
Completion date of the validation report	23/03/2020
Version number of PDD to which this report applies	Version: 1.1; Dated: 24/02/2020
Date when PDD was uploaded for global stakeholder consultation	N/A
Project participant(s)	Cygni Energy Private Limited
	Value Network Venture Advisory Services LLP
Host Party	India
Estimated annual average GHG emission reductions or net removals in the crediting period (tCO2e)	36,605
SDG Impacts:	<ul> <li>SDG 3: Good Health and Well-Being</li> <li>SDG 7: Affordable and Clean Energy</li> <li>SDG 13: Climate</li> </ul>
Sectoral scope(s) and selected methodology(ies)	01 <sup>1</sup> AMS-III.BL. Integrated methodology for electrification of communities (version 1.0)
Name of GS VVB	Carbon Check (India) Private Limited
Name, position and signature of the approver of the validation report	Vikash Kumar Singh Compliance Officer
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<sup>&</sup>lt;sup>1</sup> As per "Standard: Applicability of sectoral scope" (Version 01.0) - CDM-EB88-A04-STAN (<u>https://cdm.unfccc.int/Reference/Standards/index.html</u>)

#### **SECTION A. Executive summary**

#### Purpose and general description

The Project Participant "Value Network Venture Advisory Services LLP" (hereafter referred as "PP") has appointed the Carbon Check (India) Private Ltd. (hereafter referred as "VVB") to perform an independent validation of the Gold Standard Project Activity "Solar DC programme in off-grid regions in India" in the host country of India (hereafter referred to as "project activity"). This report summarises the findings of the validation of the project, performed on the basis of Gold Standard criteria for registration, UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. This report contains the findings and resolutions from the validation and a validation opinion.

As per the GS PDD the project activity "Solar DC programme in off-grid regions in India" will implement a Solar DC Inverterless solution in 50,000 households, which are not connected to the grid and meet their lighting demands through use of kerosene-based lamps. The household are spread across India viz. Assam, Meghalaya, Manipur, Madhay Pradesh and Jammu & Kashmir. Solar DC Inverterless solution includes solar PV generating DC power, battery charging and discharging in DC, and DC loads with wiring at home which is DC. The scenario prior to project implementation is that the households had no access to electricity and were not connected to a national/regional grid and were using kerosene-based lamps to meet their lighting needs.

The project activity is specifically aimed for Type I consumers (who were not connected to a national/regional grid or a mini-grid prior to the project implementation and who consume less than 500 kWh per year) and the same is in accordance with applied methodology AMS-III.BL (version 01.0) /B01/.

The project will reduce 36,605 tonnes of  $CO_2$  on an annual basis and 183,025 tonnes of  $CO_2$  during the 5-year crediting period. The project results in reductions of  $CO_2$  emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project in accordance with the Gold Standard requirements for additionality.

The purpose of a validation is to have a thorough and independent assessment of the proposed project activity against the applicable Gold standard and CDM requirements, in particular, the project's baseline, monitoring plan and the project's compliance with relevant UNFCCC and Gold standard criteria. These are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Validation is a requirement for all Gold Voluntary projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of voluntary emission reductions (VERs).

#### Location

The project activity "Solar DC programme in off-grid regions in India" is implemented in five (05) states of India which are Assam, Meghalaya, Manipur, Madhya Pradesh and Jammu & Kashmir.

#### Scope of the validation

The validation scope is defined as an independent and objective review of the project design document (PDD) and the GS LSC report /04/. The PDD /01/ is reviewed against the relevant criteria (see above) and decisions by the Gold standard and CDM Executive Board, including the approved baseline and monitoring methodology /B01/. The validation team has, based on the recommendations in the CDM Validation and Verification Standard employed a rule-based approach, focusing on the identification of significant risks for project implementation and the generation of VERs.

The validation is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design.

While carrying out the validation, CCIPL determines if the project activity complies with the requirements of the applicability conditions of the selected methodology /B01/, guidance issued by the Gold Standard and also assess the claims and assumptions made in the PDD /01/ without limitation on the information provided by the project participants.

The Validation team confirms the contractual relationship signed /17/ between the GS VVB (Carbon Check (India) Private Ltd.) and the Project Participant (Value Network Venture Advisory Services LLP). The team assigned to the validation meets the Carbon Check (India) Private Ltd.'s internal procedures including the UNFCCC/Gold Standard requirements for the team composition and competence. The projects team has conducted a thorough contract review as per UNFCCC and Carbon Check procedures and requirements.

#### Validation methodology

The validation has been performed as described in the VVS and constitutes the following steps:

- Document review of data and information (PDD /01/ and the relevant documents including the reference to information relating to projects or technologies similar to the proposed project activity and review based on the approved methodology /B01/ being applied and of the appropriateness of formulae and accuracy of calculations).
- Cross checks between information provided in the PDD /01/ and information from other sources.
- Follow up actions for cross checking data and on-site assessment.
- Reference to available information
- Issuance of Validation Report.

#### Validation Process

The validation consists of the following four phases:

- A desk review of the project design documents Ι.
  - A review of data and information;
  - Cross checks between information provided in the PDD /01/ and the information from sources with all the necessary means without limitations to the information provided by the project proponent;
- Upload of the Validation work plan on the SustainCert. Ш.
  - On-site visit and follow-up interviews with the project stakeholders
    - Interviews with the relevant stakeholders in the host country with personnel having knowledge with the project development via telephone, email or direct on-site visits;
    - Cross checking between information provided by interviewed personnel with all necessary means without limitations to the information provided by the project proponent;
- III. Reference to available information's relating to projects or technologies similar projects under validation and review based on the approved methodology /B01/ being applied of the appropriateness of formulae and accuracy of calculations.
- IV. The resolution of outstanding issues and the issuance of the final validation report and opinion.

The report is based on the assessment of the PDD /01/ undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to document reviews, site visit, and stakeholder interviews, review of the applicable/applied methodology /B01/ and its underlying formulae and calculations.

This report contains the findings and resolutions from the validation and a validation opinion on the proposed project thus confirming the project design as document is sound and reasonable and meets the stated requirements and identified criteria.

The validation protocol describes a total of nineteen (19) findings which include:

- 13 (Thirteen) Corrective Action Requests (CARs);
- 06 (Six) Clarification Requests (CLs); •

All findings are closed during the validation process.

#### Conclusion

Carbon Check (India) Private Ltd. concludes the validation with a positive opinion that the Project Activity "Solar DC programme in off-grid regions in India" in India, as described in the PDD /01/, meets all applicable requirements of Gold standard, relevant methodologies, tools and guidelines.

The selected baseline and monitoring methodology /B01/ are applicable to the project and correctly applied. Carbon Check (India) Private Ltd. therefore recommends the project to the Gold Standard for registration.

#### **SECTION B.** Validation team, technical reviewer and approver

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of GS VVB or outsourced entity)
1.	Team Leader/ Technical Expert/ Validator	IR	Anand	Amit	CCIPL
2.	Team Member	IR	Chaudhri	Tushar Eknath	CCIPL
3.	Local Expert	ER	Buragohain	Champok	CCIPL
4.	Technical reviewer	IR	Agarwalla	Sanjay Kumar	CCIPL

#### B.1. Validation team member

#### Audit Team Experience:

The team composition is linked to the methodology and local experience in the host country.

**Amit Anand:** Qualified lead assessor and internal technical reviewer for offset projects validations and verifications under CDM, VCS and Gold Standard (GS) and actively been involved in the validation and verification or internal technical review of more than 200 offset projects. He is qualified as technical expert for TA 1.1, 1.2, 3.1, 13.1 and 14.1 under CDM Sectoral Scope categorisation. He has a professional experience of more than 14 years in various capacities with organizational like MITCON, TUV Rheinland, Deloitte and MGM International in the development and validation/verification of carbon offset projects under different market-based mechanism. He has also attended several GS VVB webinar trainings and also webinar on GS4GG and passed the online examination under GS4GG. He was also involved in validation and verification the following Gold Standard Projects: GS 1078, GS 976, GS 850, and GS 916 PoA (GS 1231 (VPA 01) GS 1029 (VPA 02), GS 1030(VPA 03), GS 1031(VPA 04).

**Tushar Chaudhari:** He is an appointed Team member for technical area 1.1, 1.2, 3.1, 13.1. He is having more than 11 years of experience, which involves more than 01 years of industrial experience and almost ten years in climate change. He worked in various capacities at Jain Irrigation Systems Ltd, Mitcon Consultancy and Engineering Services Limited, PJR CDM India Pvt. Ltd. He is involved in more than 15 GHG audits including validation/verification. He also has GS project consulting experience and attended the Gold Standard webinars. The GS projects on which he has worked GS 561.

**Champok Buragohain:** is an appointed Local Expert. He is also well versed with English (language of audit) as well as Assamese (local languages spoken) in the project area.

**Sanjay Kumar Agarwalla:** He is an appointed Team Leader and Technical Expert for technical area 1.1, 1.2, 2.1, 3.1, 4.1, 5.1, 5.2, 8.1, 9.1, 9.2 and 13.1. He is having more than 17 years of experience, which involves more than 10 years of industrial experience and almost seven years in climate change. He worked in various capacities at Kesoram Rayon, Durgapur Chemicals Limited, Gensol Consultants, TUV Rheinland India Pvt Ltd and LRQA. He is involved in more than 70 GHG audits including validation/verification/post registration changes. He also has GS Audit Experience and attended the Gold Standard webinar. He has also attended several GS VVB webinar trainings and also webinar on GS4GG and passed the online examination under GS4GG. The GS projects on which he has worked are 1309, 850, 6191, 411, 1353 and 939.

#### **SECTION C.** Means of validation

#### C.1. Desk review

List of all documents reviewed or referenced during the validation is provided in Appendix-3.

## C.2. On-site inspection

	Duration of on-site inspection: 29/01/2020 – 30/01/2020					
No.	Activity performed on-site	Site location	Date	Team member		
1.	Opening Meeting	Guwahati	29/01/2020	Amit Anand (AA) Champok Buragohain (CB)		
2.	<ul> <li>Discussion on the following aspects of the project:</li> <li>Project design and proposed technology to be used</li> <li>Baseline survey</li> <li>Baseline Scenarios</li> <li>Emission Reductions</li> <li>Environmental Impacts</li> <li>Implementation schedule with milestones</li> <li>Management structure with Roles and Responsibilities</li> <li>Monitoring Plan/Sampling Plan and process to be adopted</li> </ul>	Guwahati	29/01 – 30/01/2020	AA, CB		
3.	<ul> <li>Following on-site inspections were conducted:</li> <li>08 households from the baseline survey were visited and interviewed</li> <li>Sample households where project activity has been implemented (08 in number) were visited</li> <li>Implementation and operation status were reviewed</li> </ul>	Guwahati	29/01 – 30/01/2020	AA, CB		
4.	Local stakeholder interviews	Guwahati	29/01 – 30/01/2020	AA, CB		
5.	Discussion on PDD, ER spread-sheet and supporting documents	Guwahati	29/01 – 30/01/2020	AA, CB		

## C.3. Interviews

	Interviewee		Interviewee		Teem	
No.	Last name	First name	Affiliation	Date	Subject	member
1.	Deka	Nayan Jyoti	VNV	29/01/2020; 30/01/2020	<ul> <li>Project Design</li> <li>Organisation background</li> <li>Project Implementation plan</li> <li>Project start date</li> <li>Project Location</li> <li>Baseline Scenario</li> <li>Baseline Identification</li> <li>Additionality</li> <li>Monitoring and reporting documentation</li> <li>Qualification and Training</li> <li>Quality Assurance – Management and operating system</li> <li>Social and Environmental Impacts</li> <li>Local Stakeholders meeting process</li> </ul>	AA, CB

					<ul> <li>Compliance with relevant laws</li> <li>Roles and responsibility</li> <li>Observations of established practices</li> </ul>	
2.	Das	Inderjeet	Cygni Energy Pvt Ltd	29/01/2020; 30/01/2020	<ul> <li>Project Design</li> <li>Organisation background</li> <li>Project Implementation plan</li> <li>Project start date</li> <li>Project Location</li> <li>Qualification and Training</li> <li>Quality Assurance – Management and operating system</li> </ul>	AA, CB
3.	Lakhar	Biju	Nirman Associate	29/01/2020; 30/01/2020	<ul> <li>Project Implementation plan</li> <li>Operation and maintenance</li> <li>Repair and replacement</li> </ul>	AA, CB
4.	Bezbaruah	Utpal	Cygni Energy Pvt Ltd	29/01/2020; 30/01/2020	<ul> <li>Project Design</li> <li>Organisation background</li> <li>Project Implementation plan</li> <li>Project start date</li> <li>Project Location</li> <li>Qualification and Training</li> <li>Quality Assurance – Management and operating system</li> </ul>	AA, CB

## **SECTION D.** Validation findings

## D.1. Description of project activity

Means of validation	Document Review, Interview
Findings	CL 01, CL 04, CAR 01, CAR 02, CAR 03 and CAR 04 were raised in this regard and have been resolved. Please refer to Appendix 4 of this report for detailed closure of these finding.
Conclusion	The PDD /01/ contains a description, which provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation.
	The location of the project activity is clearly defined in the PDD /01/ and the household are spread across India viz. Assam, Meghalaya, Manipur, Madhay Pradesh and Jammu & Kashmir. Project activity involves implementation of Solar DC Inverterless solution in households, which are not connected to the grid and dependent on kerosene-based lamps to meet their lighting needs. Solar DC Inverterless solution includes solar PV generating DC power, battery charging and discharging in DC, and DC loads with wiring at home which is DC.
	The scenario prior to project implementation is that the households had no access to electricity and were not connected to a national/regional grid. The project activity is specifically aimed for Type I consumers (who were not connected to a national/regional grid or a mini grid prior to the project implementation and who consume less than 500 kWh per year) and the same is in accordance with applied methodology AMS-III.BL (version 01.0) /B01/.
	As per the PDD /01/, the project aims to install 50,000 Solar DC Inverterless solution, across the five (05) states of India reducing 36,605 tonnes of $CO_2$ on an annual basis and 1.83,025 tonnes of $CO_2$ during the 5-year crediting period

The technical	specifications	of the Solar DO	C Inverterless solution	on are:
<ul> <li>PV roof t</li> <li>Inverterle</li> <li>Li-ion Ba</li> <li>1 DC mo</li> <li>1 DC soc</li> <li>5 DC bul</li> <li>1 BLDC e</li> </ul>	op array: 200 ess controller ttery - 625Wh bile charger cket b ceiling fan	Peak capacity	in Wp	
The design of and through t interviewed re understand the	the project tec he review of presentative c e maintenance	hnology was as documents /01 of PP and also r e and monitorin	esessed through phy I/, /08/ and /09/. V reviewed the rectific ig of the project acti	sical site inspection alidation team also ation reports /15/ to vity.
The project ov project, which validation proc	wner has serio has been co cess.	ously considere nfirmed with re	ed VERs in the deci levant documents i	sion to develop the n the course of the
As described i array of 1 pan total installed o 15 MW and is qualifies as a Energy indust	in the PDD /0 <sup>1</sup> el of 200Wp p capacity of PV well within the small-scale <sup>1</sup> ries (renewabl	I/ and review of ower having ins arrays will not l e small-scale lin VER project ac e / non-renewa	f technical specificat stalled capacity of 2 be more than 10 MV mit for GS projects. ctivity according to able sources).	tions /08/, /09/ a PV 00W (0.2 KW). The V, which is less than Hence, the project scope category 1:
By generating lamps and po that are real, i change. The t average 36,60 period.	renewable e wer generatio measurable a otal emission 05 tCO <sub>2</sub> e per	nergy, which w n, the project r nd give long-te reductions from year over the	vill displace fossil fure results in reductions rm benefits to the r the project are est selected 5-year r	el-based kerosene s of CO <sub>2</sub> emissions nitigation of climate imated to be on the enewable crediting
The start date Solar DC Inve This is the rea term". The sta period is 5 ye Community Se	of the project erterless solut al action taker art date of cre ears. The cre ervices Activity	activity is 21/03 ion was impler by the PP in a editing period i diting period m y Requirements	/2018, that is the da nented under this p accordance with the is 21/03/2018. The nay be renewed tw S.	te on which the first project activity /16/. e "Glossary of CDM length of crediting ice in line with the
The project ty	pe, duration a	nd crediting per	riod is as follows:	
Туре	Start Date	Operational lifetime	Start date of the crediting period	Crediting period type
Retroactive	21/03/2018	10 year	21/03/2018	Renewable
The project at thus, based of the financing of	ctivity does no n the declarat of the project a	ot receive publi ion /05/ provide activity.	ic funding from any ed by PP there is no	Annex-I party and ODA diversion for
The description	on of the pro	oject given in of GS-VER vali	the PDD /01/ and dation is complete a	in the supporting and transparent.

# D.2. Application of selected baseline and monitoring methodology and selected standardized baseline

#### D.2.1. Applicability of methodology and standardized baseline

Means of validation Document Review, Interview

Findings	CL 04, CAR 04 and CAR 05 were raised in this regard and have been resolved.
	Please refer to Appendix 4 of this report for detailed closure of these finding.
Conclusion	Please refer to the assessment in Appendix 5 of the VR.

## D.2.2. Deviation from methodology

Means of validation	N/A
Findings	
Conclusion	N/A

## D.2.3. Clarification on applicability of methodology, tool and/or standardized baseline

Means of validation	N/A
Findings	
Conclusion	N/A

## D.2.4. Project boundary

Means of validation	Document Review, Interview		
Findings	CAR 06 was raised in this regard and has been resolved. Please refer to Appendix		
	4 of this report for detailed closure of these finding.		
Conclusion	As per the applied methodology AMS-III.BL (version 01.0), "Integrated methodology" for electrification of communities" /B01/, the boundary of a typical project is confined to 'for project activities involving national or regional grids, the spatial extent of the project boundary includes all power plants within the host country physically connected through transmission and distribution lines to the national or regional grid which is being extended through the project activity' (as per § 15 of the applied methodology) and 'For all project types, the spatial extent of the project activity' (as per §18 of the end-use consumers served by the project activity' (as per §18 of the applied methodology) . The information has been also correctly given in section B.3 of PDD /01/.		
	The physical delineation of the project activity and the description of the emission sources and GHGs that are included in the project boundary are appropriate for the purpose of calculating project and baseline emissions for project activity.		
	The methodology indicates CO <sub>2</sub> as the only GHG from baseline activity sources to be included in the boundary. Furthermore, there is no project emission due to the project activity as the project activity is a Solar DC Inverterless solution and doesn't involve combustion of fossil fuel for on-site consumption. Validation team confirms that the justification provided by the PP is reasonable and evidenced.		
	This is in conformance with §39 of the applied methodology /B01/.		

#### D.2.5. Establishment and description of baseline scenario

Means of validation	Document Review, Interview
Findings	CL 04, CAR 03 and CAR 07 were raised in this regard and have been resolved.
-	Please refer to Appendix 4 of this report for detailed closure of these finding.
Conclusion	Validation team confirms that the baseline scenario opted by the project activity /01/ is "a combination of fossil fuel based lighting and stand-alone fossil fuel generators", which is relevant for consumer Type I (who were not connected to a national/regional grid or a mini-grid prior to the project implementation and who consume less than 500 kWh per year) and the same is in accordance with the requirements of § 20 (a), 22 and 23 of the applied methodology, AMS-III.BL (version 01.0), "Integrated methodology" for electrification of communities" /B01/.
	Validation team confirms that the project for implementation of solar DC inverterless system for rural electrification of villages in different states on India has been awarded to the PP under Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) by the state power development corporation or the renewable energy development agency of the state /06/. Under this scheme the identification of villages that are not electrified has been done by the state government agencies/DICSOM through REC (Rural Electrification Commission, a government body).

The contract between the state government agencies/ DICSOM and the PP
specifies the number of villages including the number of households where the
solar inverterless system has to be installed. The baseline survey work is carried
out by the government agencies/ DICSOM of the respective states and the only
responsibility of the PP in the entire scheme of things is to install and maintain the
systems during their warranty period. Thus, the baseline for the project activity is
use of fossil-fuel based lamps to meet the lighting needs of the end-
users/households. Thus, in essence the baseline itself is declared by the
government that the villages/ households are not connected to the grid i.e., off-grid
households. The same was also cross-checked during OSV through interview with
representatives of PP and relevant authorities.

## D.2.6. Demonstration of additionality

Means of validation	Document Review, Interview
Findings	CL 01 and CAR 08 were raised in this regard and have been resolved. Please refer to Appendix 4 of this report for detailed closure of these finding.
Conclusion	Validation team has assessed that Community Services Activity Requirements (Version 1.2) /B02/, under § 4.1.9 states:
	"Projects that meet any of the following criteria are considered as deemed additional and therefore are not required to prove Financial Additionality at the time of Design Certification:
	(a) Positive list (Annex B)
	(b) Projects located in LDC, SIDS, LLDC
	(c) Micro-scale projects
	Validation team confirms that the project activity involves installation of Solar PV technology, which is included under section 1.1.1. of Annex B – Positive List Community Services Activity Requirements (Version 1.2) /B02/ and meets the criterion (a) of the § 4.1.9 of the Community Services Activity Requirements (Version 1.2) /B02/.
	The Community Services Activity Requirements /B02/ includes off-grid renewable electricity generation technologies projects, under which the project activity falls.

## D.2.7. Emission reductions

Means of validation	Document Review, Interview	
Findings	CAR 10 and CAR 11 were raised in this regard and have been resolved. Please	
	refer to Appendix 4 of this report for detailed closure of these findings.	
Conclusion	In accordance with the applied methodology /B01/, the emission reductions are calculated as:	
	$ER_y = BE_{,y} - (PE_y + LE_y)$ Equation (1)	
	Where:	
	$BE_y$ = Baseline emissions in year y (tCO <sub>2</sub> )	
	$PE_{,y}$ = Project emission in year y (tCO <sub>2</sub> )	
	$LE_{y}$ = Leakage emission in year y (tCO <sub>2</sub> )	
	$ER_{,y}$ = Emission reduction in year y (tCO <sub>2</sub> )	
	Baseline Emissions (BE <sub>v</sub> ):	
	According to the applied methodology /B01/, the total baseline emissions are the sum of all the individual consumer groups. calculated as follows:	

$BE_y = BE_{T1,y}$	+ B1	$_{T2,y} + BE_{T3,y} + BE_{T4,y}$	Equation (2)
Where:			
$BE_y$	=	Baseline emissions in year y (tCO <sub>2</sub> )	
$BE_{T1,y}$	=	Baseline emission from Type I consumer	rs in year <i>y</i> (tCO <sub>2</sub> )
$BE_{T2,y}$	=	Baseline emission from Type II consume	rs in year <i>y</i> (tCO <sub>2</sub> )
$BE_{T3,y}$	=	Baseline emission from Type III consume	ers in year <i>y</i> (tCO <sub>2</sub> )
$BE_{T4,y}$	=	Baseline emission from Type IV consume	ers in year <i>y</i> (tCO <sub>2</sub> )
As per the PD involved, so th	D /0 <sup>.</sup> le cal	/, in the proposed project activity, only Ty culation for baseline emission will be:	ype I consumers are
$BE_y = BE_{T1,y}$	,		Equation (3)
For Type I cor	sume	rs, baseline emissions are calculated as f	ollows:
$BE_{T1,y} = \sum_{x=1}^{N} \sum_{x$	1(EC1	$_{1,x,y} \times EF_{CO2,T1})$	Equation (4)
Where:			
$BE_{T1,y}$	=	Baseline emission from Type I consumer	s in year y (tCO <sub>2</sub> )
$EC_{T1,x,y}$	=	Annual electricity consumption of Type I year <i>y</i> (MWh)	consumer <i>x</i> in
$EF_{CO2,T1}$	=	<ul> <li>If <i>EC</i><sub>71,x,y</sub> is equal to or less than 0.05 a default value of 6.8 (tCO<sub>2</sub>/MWh);</li> </ul>	55 MWh, then use
		• If <i>EC</i> <sub><i>T1,x,y</i></sub> is less than or equal to 0.25 greater than 0.055 MWh, then:	50 MWh but
		<ul> <li>For the portion up to and includir a default value of 6.8 (tCO<sub>2</sub>/MWh</li> </ul>	ng 0.055 MWh, use n);
		<ul> <li>For the portion greater than 0.05 default value of 1.3 (tCO<sub>2</sub>/MWh);</li> </ul>	5 MWh, use a
		• If $EC_{T1,x,y}$ is greater than 0.250 MWh equal to 0.500 MWh, then:	but less than or
		<ul> <li>For the portion up to and includir a default value of 6.8 (tCO<sub>2</sub>/MWh</li> </ul>	ng 0.055 MWh use n);
		<ul> <li>For the portion greater than 0.05 than 0.25 MWh/y use a default v 1.3 (tCO<sub>2</sub>/MWh); and</li> </ul>	5 MWh and less alue of
		<ul> <li>For the portion greater than 0.25 default value of 1.0 (tCO<sub>2</sub>/MWh);</li> </ul>	0 MWh use a
		<ul> <li>If <i>EC<sub>T1M,j,y</sub></i> is greater than 0.500 MWh value of 1.0 (tCO<sub>2</sub>/MWh) for the entir default values of 1.3 (tCO<sub>2</sub>/MWh) or are not eligible for any of the portions</li> </ul>	then use a default e portion (i.e. 6.8 (tCO <sub>2</sub> /MWh) 8) <sup>2</sup>
$N_y$	=	Number of Type I consumers in year y	
х	=	Type I consumer (x = 1, 2, 3,)	

Project Emissions (PE <sub>v</sub> ):
In accordance with PDD /01/, the project activity involves installation of a new individual renewable energy system. So, there are no project emission due to implementation and operation of project activity.
The same is in accordance with § 37 of the applied methodology /B01/.
Hence, PE <sub>y</sub> = 0
Leakage Emissions:
§ 35 of the applied methodology /B01/ requires that leakage on account of construction of new transmission/distribution lines (e.g. carbon stock loss due to deforestation) shall be calculated using the method indicated in baseline and monitoring methodology "AM0045: Grid connection of isolated electricity systems" or "AM0104: Interconnection of electricity grids in countries with economic merit order dispatch". However, the project activity involves installation of individual renewable energy system (Solar PV) on the rooftop or premise of individual households and so, would not involve construction of new transmission/distribution lines. Hence, leakage on account of this is Zero (0).
<ul> <li>§ 36 of the applied methodology /B01/ requires that 36. If any energy generating equipment is transferred from another activity, leakage is to be considered. However, the project activity involves installation of new individual renewable energy system (Solar PV) and so, there is no transfer of any energy generating equipment is transferred from another activity. Hence, leakage on account of this is Zero (0).</li> </ul>
Hence, LE <sub>y</sub> = 0.
So, the reduce equation for calculation of emission reduction becomes:
$ER_y = BE_{,y}$ Equation (5)
The application of the baseline methodology has been transparently detailed in the PDD /01/. The consideration of the leakages, the boundary of the project activity and the calculations are in accordance with the provisions of the applied methodology /B01/.
The PDD confirms to meet the procedures provided in the methodology for category I consumers. The formulae are correctly presented for the determination of emission reductions. The assumptions and data used to determine the emission reductions are listed in PDD /01/ and all the sources have been detailed. In summary, the calculations of emission reductions are considered to be correct and according to requirements stated in the applied methodologies and PDD.
<ul> <li>Therefore, VVB, based on the above assessment, confirms that:</li> <li>All assumptions and data used by the project participants are listed in the PDD, including their references and sources;</li> <li>All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;</li> <li>All values used in the PDD is considered reasonable in the context of the proposed project activity;</li> <li>The baseline methodologies have been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions; and</li> </ul>

<sup>&</sup>lt;sup>2</sup> Type I consumers are defined as having less than 500 kWh/year consumption at the start of the project activity. In the event that average electricity consumption of Type-I consumers monitored during the crediting period exceeds 500 kWh/year, they should be reclassified as Type II consumers at the renewable of the crediting period.

٠	All estimates of the baseline emissions can be replicated using the data and
	parameter values provided in the PDD and ER sheet.

Means of validation	Document Review, Interview
Findings	CL 02, CL 03, CL 04, CL 06 CAR 09, CAR 12 and CAR 13 were raised in this regard and have been resolved. Please refer to Appendix 4 of this report for detailed closure of these finding.
Conclusion	The project uses the methodology AMS-III.BL (version 01.0) /B02/. All the parameters as listed in section B.7.1 of the PDD /01/ have to be monitored. In section B.7.3 of the PDD /01/, the responsibilities under monitoring organisation have been provided correctly. The monitoring organization structure for the project has been provided.
	Based on OSV interview, validation team confirms that the monitoring based on above is appropriate and also in line with the requirements of AMS-III.BL (version 01.0) /B01/.
	The procedure for internal auditing and procedures for handling non-conformances with the validated monitoring plan have been provided in section B.7.3 of the PDD /01/. The details as provided have been compared with the Management System workflows and Operation & Maintenance plan for the project activity.
	Validation team confirms that the monitoring plan complies with the requirements of the methodology, AMS-III.BL (version 01.0) /B01/, the monitoring arrangements described in the monitoring plan are feasible within the project design and that the PP is able to implement the described monitoring plan.

## D.2.8. Monitoring plan

## D.3. Duration and crediting period

Means of validation	Document Review, Interview
Findings	CL 04 was raised in this regard and has been resolved. Please refer to Appendix
	4 of this report for detailed closure of these finding.
Conclusion	The implementation status of the project activity has been provided to the validation team. The start date of the crediting period for the project activity is 21/03/2018, which is the date of installation of the first solar DC inverterless system under the project activity /16/.
	Start date of the crediting period, expected operational lifetime /14/ and duration of the crediting period, have been provided in the PDD /01/; checked and found appropriate to the validation team.

## D.4. Environmental impacts

Means of validation	Document Review, Interview
Findings	NA
Conclusion	No EIA is required for the project activity.

### D.5. Local stakeholder consultation

Means of validation	Document Review, Interview
Findings	CL 05 was raised in this regard and have been resolved. Please refer to Appendix
-	4 of this report for detailed closure of these finding.
Conclusion	As this is a retroactive project activity a "Stakeholder Feedback Round (SFR)" meeting was conducted by the PP.
	A live stakeholder meeting was held on June 25, 2019 in the school, 886 no Geramari L.P. School, Vill – Tarangapur, Kaminirvita, Goalpara District, Assam. The PP made the PDD and other related technical and GS documents available at the project site office for review and comments by local stakeholders. The documents were made available electronically as well as physically for a period of 60 days starting from 18/06/2019 to 17/08/2019. A wide range of different groups of stakeholders have been invited comprising of end-users, local government

ooficials at district level, heads of villages, GS representatives and GS international NGO supporters. The key comments made by the local stakeholders were all answered during the local stakeholder consultation meeting and have also been provided in the LSC report /04/. The LSC report /04/ contains evidence for local stakeholder consultation such as Invitation letter, list of attendees, evaluation form filled by the local stakeholders; checked by validation team as the evidence of Local Stakeholder Consultation.
Local stakeholders who attended the meeting were also interviewed during the site visit. Validation team considers the local stakeholder consultation to be adequate for the project activity and that the comments received have been duly taken into account.
The report of stakeholder feedback round and related responses of the project participants have been reviewed by validation team and deemed adequate and transparent. There were no adverse comments regarding the project activity from the stakeholders during the SFR and comments are overall of positive nature and are not resulting in a need for a re-design of the project activity. The same was validated through interviews with stakeholders during on site visit and also assessed by the validation team through review of LSC report /04/ and interview with representatives of PP.
No further written comments have been received so far. Hence the validation team confirms that the SFR was carried out adequately and the requirements for local stakeholder process for Gold Standard projects have been fulfilled.
Furthermore, as per the interviews, validation team confirms that there is a effective continuous consultation/grievance mechanism process so any stakeholders can access, approach and provide feedback to PP if they want. The grievance register /11/ has been placed in district office as witnessed by the validation team during the on-site inspection. This is deemed appropriate and acceptable to the validation team.

#### **SECTION E.** Internal quality control

The validation report has passed a technical review and quality review before being submitted to the project participant and UNFCCC Executive Board. The technical review was performed by a technical reviewer qualified in accordance with CCIPL's qualification scheme for CDM validation and verification.

Abbreviations	Full texts
BAU	Business As Usual
CA	Corrective Action / Clarification Action
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CAR	Corrective Action Request
CCIPL	Carbon Check (India) Private Ltd.
CER	Certified Emission Reduction
CL	Clarification Request
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent
DR	Document review
DVR	Draft Validation Report
EB	CDM Executive Board
EF	Emission Factor
El	External individual
FA	Final Approval
FAR	Forward Action Request
FVR	Final validation Report
GHG	Greenhouse gas(es)
GS4GG	Gold standard for global goals
1	Interview
IICS	Institutional Improved cook stove
IPCC	Intergovernmental Panel on ClimateChange
IR	Internal resource
MW	Mega Watt
PDD	Project Design Document
PP	Project Participant
OSV	On Site Visit
QC/QA	Quality control /Quality assurance
SS	Sectoral Scope
ТА	Technical Area
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard

# Appendix 1. Abbreviations

Appendix 2. Competence of team members and technical reviewer

	PLOIF Deck
Carbon Check	(India) Private Ltd.
Am	it Anand
has been qualified as per CCIPL's internal qua of Accreditation Standard (version 07.0):	lification procedures, in accordance with requirements
For fol	lowing functions:
Validator 🛛 Team Lead Verifier 🖾 Technical	ler 🛛 Technical reviewer 🖾 Expert 🖾 Local Expert <sup>1</sup> 🖾
In the follo	wing Technical Areas:
TA 1.1 🛛 TA 3.1 🖾 T TA 1.2 🖾 TA 4.1 🗌 T TA 2.1 🗌 TA 5.1 🔲 T Mr. V Cor	A 5.2 $\Box$ TA 9.2 $\Box$ TA 13.2 $\Box$ A 8.1 $\boxtimes$ TA 10.1 $\Box$ TA 14.1 $\boxtimes$ A 9.1 $\Box$ TA 13.1 $\boxtimes$ ikash Kumar Singh mpliance Officer
Date of Approval 24/12/2019	<b>Valid Till</b> 23/12/2020
Revision His	story of the Document
26/12/2014 24/12/2015 20/01/2016 23/12/2016 24/12/2017 24/12/2018 24/12/2019	Initial Adoption Annual Revision Interim Revision for office address change Annual Revision Annual Revision Annual Revision Annual Revision
<sup>1</sup> India, South Africa CARBON CHEC Registered in In Regd. Off: 2071/38, 2 <sup>nd</sup> Flor Corporate off: G 49 & 50, 3 <sup>rd</sup> Flor Tel: +91 120 4373 e-mail:	CK (INDIA) PRIVATE LIMITED dia: U74930DL2012PTC232495 or, Naiwala, Karol Bagh, New Delhi - 110005 oor, Sector – 3, NOIDA (Uttar Pradesh) – 201301 114  URL: <u>www.carboncheck.co.in</u> info@carboncheck.co.in

	AFDOIF Check		
Carbon Chec	k (India) Private Ltd.		
<u>Tushar E</u>	knath Choudhari		
has been qualified as per CCIPL's internal of Accreditation Standard (version 06.0):	qualification procedures, in accordance with requirements		
For	following functions:		
ValidatorImage: Team LeaderImage: Technical reviewerImage: Technical ExpertVerifierImage: Technical ExpertImage: Local ExpertImage: Technical Expert			
In the fo	llowing Technical Areas:		
TA 1.1       Image: TA 3.1       Image: TA 3.1	TA 5.2       TA 9.2       TA 13.2       Image: Constraint of the second secon		
- 0 & S-	Imilyo		
Mr. Vikash Kumar Singh	Mr. Amit Anand		
Date of Approval 24/12/2019	Valid Till 23/12/2020		
Revision	History of the Document		
26/12/2014 24/12/2015 20/01/2016 23/12/2017 24/12/2017 24/12/2018 24/12/2019	Initial Adoption Annual Revision Interim Revision for office address change Annual Revision Annual Revision Annual Revision		
1 India			
CARBON CHE	CK (INDIA) PRIVATE LIMITED Idia: U74930DL2012PTC232495		

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Sanja	iy Agarwalla
has been qualified as per CCIPL's internal que of Accreditation Standard (version 06.0):	ualification procedures, in accordance with requirements
For f	ollowing functions:
Validator 🛛 Team Lea Verifier 🖾 Technica	ader 🛛 Technical reviewer 🖾 I Expert 🖾 Local Expert <sup>1</sup> 🖾
In the fol	lowing Technical Areas:
TA 1.1       ⊠       TA 3.1       ⊠       □         TA 1.2       ⊠       TA 4.1       ⊠       □         TA 2.1       ⊠       TA 5.1       ⊠       □	TA 5.2 🛛 TA 9.2 🖾 TA 13.2 🗌 TA 8.1 🔲 TA 10.1 🗍 TA 14.1 🗍 TA 9.1 🖾 TA 13.1 🖾
- 0 & l -	Amilyo
Mr. Vikash Kumar Singh	Mr. Amit Anand
Compliance Officer	CEO
Date of Approval 24/12/2019	<b>Valid Till</b> 23/12/2020
Revision Hi	story of the Document
26/12/2014	Initial Adoption Annual Revision
20/01/2016	Interim Revision for office address change
24/12/2018 24/12/2019	Annual Revision Annual Revision
<sup>1</sup> India	K (INDIA) PRIVATE LIMITED

Appendix 3.	Documents	reviewed	or	referenced
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Ref no.	Reference Document
/01/	Final PDD (version 1.1; Dated 24/02/2020)
/02/	Emission reduction spread sheet corresponding to /01/
/03/	Gold Standard's preliminary review comments on the project
/04/	<ul><li>Documents pertaining to local stakeholder consultation:</li><li>Gold Standard LSC Report (version 1.1; Dated: dated 25/10/2019)</li></ul>
/05/	ODA Declaration by the Project participant.
/06/	<ul> <li>Letter of Award for Rural Electrification Work under DDG programme of DDUGJY from:</li> <li>Assam – Assam Power Distribution Company Limited (Ref. No.: APDCL/CGM (RE)/NRE-86/Pt-I/2015-16/70; Dated: 10/08/2017)</li> <li>Jammu &amp; Kashmir – Jammu &amp; Kashmir State Power Development Corporation Limited (Ref. No.: JKSPDC/Tech/UnE-9481-88; Dated: 03/03/2018)</li> <li>Madhya Pradesh – Madhya Pradesh Urja Vikas Nigam Limited (Ref. No.: MPUVN/SPV-DDG/2017-18/4137; Dated: 06/02/2018)</li> <li>Manipur-Manipur Renewable Energy Development Agency (Ref. No.: 48/3/2016/REC/PMA/MANIREDA; Dated: 10/11/2017)</li> <li>Meghalaya – North Eastern Electric Power Corporation Limited (Ref. No.: QP/C&amp;P/F/E/Solar/DDUGJY/2062/Vol-I/205; Dated: 01/05/2018)</li> <li>Rajasthan – Ajmer Vidyut Vitran Nigam Limited (Ref. No.: AVVNL/SE (DDUGJY)/XEN/AEN-II/TN-80-Lot-I/WO NO 83/D4548; Dated: 05/03/2019)</li> </ul>
/07/	State wise records of Implemented Solar DC Inverterless solution (as on date).
/08/	Technical Specifications of Solar DC Inverterless for off-grid/near off-grid homes by Department of Electrical Engineering, Indian Institute of Technology, Madras)
/09/	Technical Specifications of Lead Acid battery by Project Purchase, Indian Institute of Technology, Madras)
/10/	Preliminary Review Report under Gold Standard for the Global Goals for Solar DC programme in off-grid regions in India (GS 7467)
/11/	E-mail (dated: 02/12/2019) from SustainCert stating that Preliminary Review-GS4GG is closed.
/12/	Snap shot of grievance register at district office
/13/	Carbon waiver forms: Agreement Between Cygni Energy Private Limited and customer with a view to disseminating Solar DC system: • Husen Ali (ID no. of Unit: 1000605018018230) • Mohiruddin (ID no. of Unit: 1000604718015197)
/14/	CYGNI - Proof of operational lifetime and warranty of different components of the solar DC inverterless systems distributed/installed under the project

/15/	CYGNI - Rectification Report – Quarterly report of monthly maintenance status of functioning of Solar PV based system (Ref. No.: CYGNI/MP-850; Dated: 30/06/2018)
/16/	<ul> <li>Proof of project start date (21/03/2018) – Consent form signed between Cygni Energy Private Limited and end-user (Tarjen Tepon):</li> <li>IBIS SI. No.: 1000200318002985</li> <li>Solar Panel Module: WS12198006007189</li> </ul>
/17/	Contract dated 06/01/2020 between GS VVB and VNV Advisory Services PTE limited for Validation and verification of the project.
/18/	Solar Availability report By Cygni Energy Private Limited (Ref. No.: CYGNI/20/1547; Dated: 14/02/2020)
/19/	Employment agreement between Cygni Energy Private Limited and Mr Muratza Ali (Dated 05/03/2019)
/20/	<ul> <li>Test Certificates for the main component of the Solar DC inverterless system:</li> <li>IEC 61701:2011 (Certificate No.: TC-5688; Report No.: 19631623.0001; 06/04/2018) – TUV Rheinland</li> <li>IEC 61215:2005 (Ref. Certificate No.: US-32569-UL; Dated: 16/10/2018) - Underwriter Laboratories</li> <li>IEC 61730-1:2004 (Ref. Certificate No.: US-32570-UL; Dated: 16/10/2018) - Underwriter Laboratories</li> <li>IEC 61730-2:2004 (Ref. Certificate No.: US-32570-UL; Dated: 16/10/2018) - Underwriter Laboratories</li> </ul>
/21/	Central Power Research Institute: Test report for 200Wp, 48 V DC solar controller along with appliances and panel (Ref. No.: CPRIBLRERED 18T0098; Dated: 14/09/2018)

## Background documents:

Ref no.	Reference Document
/B01/	AMS III. BL "Integrated methodology for electrification of communities" (version 01.0)
/B02/	Community Services Activity Requirements (version 1.2) under GS4GG https://globalgoals.goldstandard.org/200-gs4gg-community-services-activity-requirements/
/B03/	<ul> <li>Evidence of economic, social and environmental safeguard: <ul> <li>a) Universal Declaration of Human Rights. India has ratified many UN Human Rights Conventions</li> <li>https://tbinternet.ohchr.org/_layouts/15/TreatyBodyExternal/Treaty.aspx?CountryID=7</li> <li><u>9⟪=EN</u></li> </ul> </li> <li>b) India has ratified ILO Conventions 100 (Equal Remuneration Convention) and 111 (Discrimination (employment and occupation) Convention): http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11200:0::NO::P11200_COUN TRY_ID:102691</li> <li>c) India has ratified Convention on Elimination of All Forms of Discrimination Against Women (CEDAW) in 1993: <a href="https://indicators.ohchr.org">https://indicators.ohchr.org</a></li> <li>d) India has ratified Convention concerning the Protection of the World Cultural and Natural Heritage 1972: <a href="http://www.unesco.org/eri/la/convention.asp?KO=13055&amp;language=E">http://www.unesco.org/eri/la/convention.asp?KO=13055&amp;language=E</a></li> <li>e) India has ratified the UN Convention against Corruption: <a href="https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&amp;mtdsg_no=XVIII-14&amp;chapter=18&amp;clang=_en">https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&amp;mtdsg_no=XVIII-14&amp;chapter=18&amp;clang=_en</a></li> <li>f) India has ratified many ILO Conventions, amongst others convention 29 (Forced Labour Convention) and 105 (Abolition of Forced Labour Convention): <a href="http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11200:::NO::P11200_COUN">http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11200:::NO::P11200_COUN</a></li> </ul>
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	g) India has ratified ILO Conventions 138 (Minimum Age Convention) and 182 (Wors
	Forms of Child Labour Convention)
	http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11200:0::NO::P11200_COUN
	<u>TRY_ID:102691</u>
	a) VVS for CDM Project Activities (version 02.0)
/B04/	b) PS for CDM Project Activities (version 02.0)
	c) PCP for CDM Project Activities (version 02.0)
/B05/	Tool to calculate the emission factor for an electricity system (version 07.0)
/B06/	Tool to calculate project or leakage CO2 emissions from fossil fuel combustion (version 3)
/B07/	Demonstration of additionality of small-scale project activities (version 13.0)
/B08/	Gold Standard for the Global Goals – Principles & Requirements (Version 1.2)

## Appendix 4: Clarification requests, corrective action requests and forward action requests

CL ID       01       Section no.       D.1 / D.2.6       Date:05/02/2020         Description of CL       PP shall explain why "COMMUNITY SERVICES ACTIVITY REQUIREMENTS" have not been applied for this PA?       Date: 24/02/2020         Now the PDD has been revised and "COMMUNITY SERVICES ACTIVITY REQUIREMENTS" have not been applied for this project activity.       Date: 24/02/2020         Now the PDD has been revised and "COMMUNITY SERVICES ACTIVITY REQUIREMENTS" has been applied in this project activity.       Decumentation provided by project participant         Revised PDD       Documentation provided by project participant       Revised PDD         DOE assessment       Date: 28/02/2020         The PDD has been revised to correctly apply "Community Services Activity requirements" for this project activity.       CL is closed.         CL is closed.       ID       02       Section no.       D.2.8       Date: 05/02/2020         Description of CL       In section B.6.3 and B.7.1 of the PDD, for all the ex-ante/post parameters PP has provided information on the SDG goals. PP shall explain how the mentioned SDG goals are relevant to the type of parameters. Moreover, the PDD template requires that only relevant SDG hacks been included in the revised PDD.         Now the Section B.6.3 & B.7.1 has been revised the relevant SGD has been included in the PDD. Now the Section B.6.3 and B.7.1 of PDD to correctly provide the relevant SDG goals corresponding to the mentioned parameters. Furthermore, PP has explained that the same is in accordance with the GS rules.         CL is c	Table 1.	CL from this valid	dation		
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PP shall explain why "COMMUNITY SERVICES ACTIVITY REQUIREMENTS" have not been applied for this PA?         Project participant response       Date: 24/02/2020         Now the PDD has been revised and "COMMUNITY SERVICES ACTIVITY REQUIREMENTS" has been applied in this project activity.       Doce assessment         DOE assessment       Date: 28/02/2020         The PDD has been revised to correctly apply "Community Services Activity requirements" for this project activity.       CL is closed.         CL is closed.       CL is closed.       Date: 05/02/2020         Description of CL       In section B.6.3 and B.7.1 of the PDD, for all the ex-ante/post parameters PP has provided information on the SDG goals. PP shall explain how the mentioned SDG goals are relevant to the type of parameters. Moreover, the PDD lemplate requires that only relevant SDG Indicators be mentioned and not the goals or targets.         Project participant response       Date: 24/02/2020         Now the Section B.6.3 & B.7.1 has been revised the relevant SGD has been included in the revised PDD.         Now the Section B.6.3 & B.7.1 has been revised the relevant SGD has been included in the revised PDD.         Documentation provided by project participant         Revised PDD       Date: 28/02/2020         Now the Section B.6.3 and B.7.1 of PDD to correctly provide the relevant SDG goals corresponding to the mentioned parameters. Furthermore, PP has explained that the same is in accordance with the GS rules.         CL is closed.       Date: 28/02/2020         DP ha	Description	of CL			
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been applied in this project activity.         Documentation provided by project participant         Revised PDD         DOE assessment       Date: 28/02/2020         The PDD has been revised to correctly apply "Community Services Activity requirements" for this project activity.         CL is closed.         CL to 0       02       Section no.       D.2.8       Date: 05/02/2020         Description of CL       In section B.6.3 and B.7.1 of the PDD, for all the ex-ante/post parameters PP has provided information on the SDG goals. PP shall explain how the mentioned SDG goals are relevant to the type of parameters. Moreover, the PPD template requires that only relevant SDG indicators be mentioned and the goals or targets.         Project participant response       Date: 24/02/2020         Now the Section B.6.3 & B.7.1 has been revised the relevant SGD has been included in the revised PDD.As per GS rule, relevant SDG should also include the relevant targets and must be included in the PDD.         Documentation provided by project participant       Revised PDD         DOE assessment       Date: 28/02/2020         PP has revised the section B.6.3 and B.7.1 of PDD to correctly provide the relevant SDG goals corresponding to the mentioned parameters. Furthermore, PP has explained that the same is in accordance with the GS rules.         CL is closed.       CL is closed.         CL is dosed.       In section B.7.1 of the PDD, for parameter Proportion of operational systems and connections: Under Measurement methods and procedures, it i	Now the PDD	) has been revised an	nd "COMMUNI"	TY SERVICES	ACTIVITY REQUIREMENTS" has
Documentation provided by project participant           Revised PDD           DOE assessment           DoE assessment           CL is closed.           CL is closed.           CL is closed.           CL is closed.           Date: 28/02/2020           Description of CL           In section B.6.3 and B.7.1 of the PDD, for all the ex-ante/post parameters PP has provided information on the SDG goals. PP shall explain how the mentioned SDG goals are relevant to the type of parameters. Moreover, the PDD template requires that only relevant SDG indicators be mentioned and not the goals or targets.           Project participant response         Date: 24/02/2020           Now the Section B.6.3 & B.7.1 has been revised the relevant SCD has been included in the revised PDD. As per GS rule, relevant SDG should also include the relevant targets and must be included in the PDD.           Documentation provided by project participant         Revised PDD           Revised PDD         Date: 28/02/2020           PP has revised the section B.6.3 and B.7.1 of PDD to correctly provide the relevant SDG goals corresponding to the mentioned parameters. Furthermore, PP has explained that the same is in accordance with the GS rules.           CL is closed.         Date: 05/02/2020           Description of CL         In section B.7.1 of the PDD, for parameter Proportion of operational systems and connections: Under Measurement methods and procedures, it is stated that, "When a consumer has a meter, these readings may be used in place of	been applied	in this project activity	′		
Revised PDD         DOE assessment       Date: 28/02/2020         The PDD has been revised to correctly apply "Community Services Activity requirements" for this project activity.         CL is closed.         CL ID       02       Section no.       D.2.8       Date::05/02/2020         Description of CL       In section B.6.3 and B.7.1 of the PDD, for all the ex-ante/post parameters PP has provided information on the SDG goals. PP shall explain how the mentioned SDG goals are relevant to the type of parameters. Moreover, the PDD template requires that only relevant SDG indicators be mentioned and not the goals or targets.         Project participant response       Date: 24/02/2020         Now the Section B.6.3 & B.7.1 has been revised the relevant SGD has been included in the revised PDD. As per GS rule, relevant SDG should also include the relevant targets and must be included in the PDD.         Documentation provided by project participant       Revised PDD         DOE assessment       Date: 28/02/2020         PP has revised the section B.6.3 and B.7.1 of PDD to correctly provide the relevant SDG goals corresponding to the mentioned parameters. Furthermore, PP has explained that the same is in accordance with the GS rules.         CL is closed.       CL is closed.       Date: 05/02/2020         Description of CL       In section B.7.1 of the PDD, for parameter Proportion of operational systems and connections:         Under Measurement methods and procedures, it is stated that, "When a consumer has a meter, these readings may be used in plac	Documentat	ion provided by pro	ject participant		
DOE assessment       Date: 28/02/2020         The PDD has been revised to correctly apply "Community Services Activity requirements" for this project activity.         CL is closed.         CL ID       02       Section no.       D.2.8       Date:05/02/2020         Description of CL       In section B.6.3 and B.7.1 of the PDD, for all the ex-ante/post parameters PP has provided information on the SDG goals. PP shall explain how the mentioned SDG goals are relevant to the type of parameters. Moreover, the PDD template requires that only relevant SDG indicators be mentioned and on the goals or targets.         Project participant response       Date: 24/02/2020         Now the Section B.6.3 & B.7.1 has been revised the relevant SGD has been included in the revised PDD. As per GS rule, relevant SDG should also include the relevant targets and must be included in the PDD.         Documentation provided by project participant       Revised PDD         Dot assessment       Date: 28/02/2020         PP has revised the section B.6.3 and B.7.1 of PDD to correctly provide the relevant SDG goals corresponding to the mentioned parameters. Furthermore, PP has explained that the same is in accordance with the GS rules.         CL is closed.       CL is closed.         CL is closed.       D.1         D assurement methods and procedures, it is stated that, "When a consumer has a meter, these readings may be used in place of on-site checks." PP shall explain how the same is applicable to the project activity and consumers being targeted.         Project participant respo	Revised PDD	)			
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CL ID       02       Section no.       D.2.8       Date:05/02/2020         Description of CL       In section B.6.3 and B.7.1 of the PDD, for all the ex-ante/post parameters PP has provided information on the SDG goals. PP shall explain how the mentioned SDG goals are relevant to the type of parameters. Moreover, the PDD template requires that only relevant SDG indicators be mentioned and not the goals or targets.         Project participant response       Date: 24/02/2020         Now the Section B.6.3 & B.7.1 has been revised the relevant SGD has been included in the revised PDD.As per GS rule, relevant SDG should also include the relevant targets and must be included in the PDD.         Documentation provided by project participant       Revised PDD         Revised PDD       Date: 28/02/2020         PP has revised the section B.6.3 and B.7.1 of PDD to correctly provide the relevant SDG goals corresponding to the mentioned parameters. Furthermore, PP has explained that the same is in accordance with the GS rules.         CL is closed.       CL is closed.         CL id 0 03       Section no.       D.2.8         Description of CL       In section B.7.1 of he PDD, for parameter Proportion of operational systems and connections: Under Measurement methods and procedures, it is stated that, "When a consumer has a meter, these readings may be used in place of on-site checks." PP shall explain how the same is applicable to the project activity and consumers being targeted.         Project participant response       Date: 24/02/2020         Now this statement has been renoved from this section	The PDD has activity.	; been revised to corre	ectly apply "Con	nmunity Services	s Activity requirements" for this project
CL ID       02       Section no.       D.2.8       Date:05/02/2020         Description of CL       In section B.6.3 and B.7.1 of the PDD, for all the ex-ante/post parameters PP has provided information on the SDG goals. PP shall explain how the mentioned SDG goals are relevant to the type of parameters. Moreover, the PDD template requires that only relevant SDG indicators be mentioned and not the goals or targets.         Project participant response       Date: 24/02/2020         Now the Section B.6.3 & B.7.1 has been revised the relevant SGD has been included in the revised PDD.As per GS rule, relevant SDG should also include the relevant targets and must be included in the PDD.         Documentation provided by project participant       Revised PDD         Dote assessment       Date: 28/02/2020         PP has revised the section B.6.3 and B.7.1 of PDD to correctly provide the relevant SDG goals corresponding to the mentioned parameters. Furthermore, PP has explained that the same is in accordance with the GS rules.         CL is closed.       CL is closed.         CL iD       03       Section no.       D.2.8       Date: 05/02/2020         Description of CL       In section B.7.1 of the PDD, for parameter Proportion of operational systems and connections:       Under Measurement methods and procedures, it is stated that, "When a consumer has a meter, these readings may be used in place of on-site checks." PP shall explain how the same is applicable to the project activity and consumers being targeted.         Project participant response       Date: 24/02/2020 <tr< td=""><td></td><td></td><td></td><td></td><td></td></tr<>					
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Date:       Date:       24/02/2020         Now the Section B.6.3 & B.7.1 has been revised the relevant SGD has been included in the revised PDD. As per GS rule, relevant SDG should also include the relevant targets and must be included in the PDD.         Documentation provided by project participant       Envised PDD         Documentation provided by project participant       Date:         Revised PDD       Date:         DOE assessment       Date:         CL is closed.       Date:         CL is closed.       Date:         In section B.7.1 of the PDD, for parameter Proportion of operational systems and connections: Under Measurement methods and procedures, it is stated that, "When a consumer has a meter, these readings may be used in place of on-site checks." PP shall explain how the same is applicable to the project activity and consumers being targeted.         Project participant response       Date:         Now this statement has been removed from this section which was erroneously included earlier.         Documentation provided by project participant Revised PDD         Dote       assessment         Date:       28/02/2020         Now this statement has been removed from this section which was erroneously included earlier.         Documentation provided by project participant Revised PDD         Dote       Bate:         Dote       Section B.7.1 of the PDD has been revised to remove the statement When a consumer has a meter, the	In section B.c the SDG goa Moreover, the targets,	3.3 and B.7.1 of the P. Is. PP shall explain ho e PDD template requi	DD, for all the e. ow the mentione res that only rele	x-ante/post para d SDG goals are evant SDG indica	meters PP has provided information on re relevant to the type of parameters. rators be mentioned and not the goals or
Now the Section B.6.3 & B.7.1 has been revised the relevant SGD has been included in the revised PDD.As per GS rule, relevant SDG should also include the relevant targets and must be included in the PDD.         Documentation provided by project participant         Revised PDD         DOE assessment         Dot assessment         Dot assessment         Dot assessment         Dot assessment         Dot assessment         Dot assessment         CL is closed.         CL is closed.         Description of CL         In section B.7.1 of the PDD, for parameter Proportion of operational systems and connections: Under Measurement methods and procedures, it is stated that, "When a consumer has a meter, these readings may be used in place of on-site checks." PP shall explain how the same is applicable to the project activity and consumers being targeted.         Project participant response       Date: 24/02/2020         Now this statement has been removed from this section which was erroneously included earlier.         Documentation provided by project participant Revised PDD         DOE assessment       Date: 28/02/2020         Section B.7.1 of the PDD has been revised to remove the statement When a consumer has a meter, these readings may be used in place of on-site checks." The same is deemed appropriate by VT.	Project parti	cipant response			Date: 24/02/2020
Documentation provided by project participant         Revised PDD         Dote assessment       Date: 28/02/2020         PP has revised the section B.6.3 and B.7.1 of PDD to correctly provide the relevant SDG goals corresponding to the mentioned parameters. Furthermore, PP has explained that the same is in accordance with the GS rules.         CL is closed.         CL ID       03       Section no.       D.2.8       Date: 05/02/2020         Description of CL         In section B.7.1 of the PDD, for parameter Proportion of operational systems and connections:         Under Measurement methods and procedures, it is stated that, "When a consumer has a meter, these readings may be used in place of on-site checks." PP shall explain how the same is applicable to the project activity and consumers being targeted.         Project participant response       Date: 24/02/2020         Now this statement has been removed from this section which was erroneously included earlier.         Documentation provided by project participant         Revised PDD         Date: 28/02/2020         Section B.7.1 of the PDD has been revised to remove the statement When a consumer has a meter, these readings may be used in place of on-site checks." TP shall explain how the same is applicable to the project activity and consumers being targeted.	Now the Sect PDD.As per ( PDD.	tion B.6.3 & B.7.1 has GS rule, relevant SDG	s been revised th G should also inc	he relevant SGD clude the relevan	has been included in the revised nt targets and must be included in the
Revised PDD         Dote assessment       Date: 28/02/2020         PP has revised the section B.6.3 and B.7.1 of PDD to correctly provide the relevant SDG goals corresponding to the mentioned parameters. Furthermore, PP has explained that the same is in accordance with the GS rules.         CL is closed.         CL ID 03 Section no. D.2.8 Date: 05/02/2020         Description of CL         In section B.7.1 of the PDD, for parameter Proportion of operational systems and connections:         Under Measurement methods and procedures, it is stated that, "When a consumer has a meter, these readings may be used in place of on-site checks." PP shall explain how the same is applicable to the project activity and consumers being targeted.         Project participant response         Date: 24/02/2020         Now this statement has been removed from this section which was erroneously included earlier.         Documentation provided by project participant         Revised PDD         Date: 28/02/2020         Section B.7.1 of the PDD has been revised to remove the statement When a consumer has a meter, these readings may be used in place of on-site checks." The same is deemed appropriate by VT.         Other: 28/02/2020	Documentat	ion provided by pro	ject participant		
DOE assessment       Date: 28/02/2020         PP has revised the section B.6.3 and B.7.1 of PDD to correctly provide the relevant SDG goals corresponding to the mentioned parameters. Furthermore, PP has explained that the same is in accordance with the GS rules.         CL is closed.         CL ID       03       Section no.       D.2.8       Date: 05/02/2020         Description of CL       In section B.7.1 of the PDD, for parameter Proportion of operational systems and connections:       Under Measurement methods and procedures, it is stated that, "When a consumer has a meter, these readings may be used in place of on-site checks." PP shall explain how the same is applicable to the project activity and consumers being targeted.         Project participant response       Date: 24/02/2020         Now this statement has been removed from this section which was erroneously included earlier.       Documentation provided by project participant         Revised PDD       Date: 28/02/2020         Section B.7.1 of the PDD has been revised to remove the statement When a consumer has a meter, these readings may be used in place of on-site checks." The same is deemed appropriate by VT.	Revised PDL	)			
PP has revised the section B.6.3 and B.7.1 of PDD to correctly provide the relevant SDG goals corresponding to the mentioned parameters. Furthermore, PP has explained that the same is in accordance with the GS rules.         CL ID       03       Section no.       D.2.8       Date: 05/02/2020         Description of CL       In section B.7.1 of the PDD, for parameter Proportion of operational systems and connections:       Under Measurement methods and procedures, it is stated that, "When a consumer has a meter, these readings may be used in place of on-site checks." PP shall explain how the same is applicable to the project activity and consumers being targeted.         Project participant response       Date: 24/02/2020         Now this statement has been removed from this section which was erroneously included earlier.       Documentation provided by project participant         Revised PDD       DOE assessment       Date: 28/02/2020         Section B.7.1 of the PDD has been revised to remove the statement When a consumer has a meter, these readings may be used in place of on-site checks." The same is deemed appropriate by VT.	DOE assess	ment			<b>Date:</b> 28/02/2020
CL ID       03       Section no.       D.2.8       Date: 05/02/2020         Description of CL       In section B.7.1 of the PDD, for parameter Proportion of operational systems and connections:       Under Measurement methods and procedures, it is stated that, "When a consumer has a meter, these readings may be used in place of on-site checks." PP shall explain how the same is applicable to the project activity and consumers being targeted.         Project participant response       Date: 24/02/2020         Now this statement has been removed from this section which was erroneously included earlier.       Documentation provided by project participant         Revised PDD       DOE assessment       Date: 28/02/2020         Section B.7.1 of the PDD has been revised to remove the statement When a consumer has a meter, these readings may be used in place of on-site checks." The same is deemed appropriate by VT.	CL is closed.				
CL ID       03       Section no.       D.2.8       Date: 05/02/2020         Description of CL       In section B.7.1 of the PDD, for parameter Proportion of operational systems and connections:       Under Measurement methods and procedures, it is stated that, "When a consumer has a meter, these readings may be used in place of on-site checks." PP shall explain how the same is applicable to the project activity and consumers being targeted.         Project participant response       Date: 24/02/2020         Now this statement has been removed from this section which was erroneously included earlier.       Documentation provided by project participant         Revised PDD       Date: 28/02/2020         Section B.7.1 of the PDD has been revised to remove the statement When a consumer has a meter, these readings may be used in place of on-site checks." The same is deemed appropriate by VT.         OL is closed       Other statement of the PDD has been revised to remove the statement When a consumer has a meter, these readings may be used in place of on-site checks." The same is deemed appropriate by VT.					
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Project participant response       Date: 24/02/2020         Now this statement has been removed from this section which was erroneously included earlier.         Documentation provided by project participant         Revised PDD         DOE assessment         Section B.7.1 of the PDD has been revised to remove the statement When a consumer has a meter, these readings may be used in place of on-site checks." The same is deemed appropriate by VT.         OL is alread	<b>Description of CL</b> In section B.7.1 of the PDD, for parameter Proportion of operational systems and connections: Under Measurement methods and procedures, it is stated that, "When a consumer has a meter, these readings may be used in place of on-site checks." PP shall explain how the same is applicable to the project activity and consumers being targeted.				
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Documentation provided by project participant         Revised PDD         DOE assessment       Date: 28/02/2020         Section B.7.1 of the PDD has been revised to remove the statement When a consumer has a meter, these readings may be used in place of on-site checks." The same is deemed appropriate by VT.         OL is alread	Now this stat	ement has been remo	oved from this se	ection which was	s erroneously included earlier.
Revised PDD       Date: 28/02/2020         DOE assessment       Date: 28/02/2020         Section B.7.1 of the PDD has been revised to remove the statement When a consumer has a meter, these readings may be used in place of on-site checks." The same is deemed appropriate by VT.         OL is alread	Documentat	ion provided by pro	ject participant		
DOE assessment       Date: 28/02/2020         Section B.7.1 of the PDD has been revised to remove the statement When a consumer has a meter, these readings may be used in place of on-site checks." The same is deemed appropriate by VT.         OL is alread	Revised PDD	)			
Section B.7.1 of the PDD has been revised to remove the statement When a consumer has a meter, these readings may be used in place of on-site checks." The same is deemed appropriate by VT.	DOE assess	ment			Date: 28/02/2020
	Section B.7.1 readings may	of the PDD has beer / be used in place of c	n revised to remo on-site checks."	ove the statemer The same is dee	nt When a consumer has a meter, these emed appropriate by VT.

CL is closed.

6/	CL ID         04         Section no.         D.1 / D.3 /D.2.1/Appendix         Date: 06/02/2020           6/         6/         6/         6/         06/02/2020         0         0         0         0         0         0         0         0         0         0
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Description of CL	
PP shall provide documentary evidences to substantiate:	
1. Start date of the project activity	
2. Operational lifetime of the project activity and project equipment	
3. Employment contract of employees for highlighting terms of reference, the responsibilities, term	is of
payment and terms of detachment	
4. Pre-feasibility and PFA assessment report	
5. Template end-user agreement	
6 Duly signed end-user agreement	
7 Proof of carbon right waiver	
8 Technical specifications for project technology and relevant certificates	
9 baseline survey report to demonstrate that the beneficiaries are not connected to the regional	al or
nation arid before the implementation of the project activity	
10 work order/ tender for all the state where the Solar DC inverterless system is distributed	
11. Complaint book or grievance book and also provide information where these books are kent du	rina
the monitoring period	illiy
12 Solar availability factor report from the manufacturer/ supplier	
Project participant recording	
Project participant response Date: 24/02/2020	
<ol> <li>Infetime certificate has been provided to substantiate the operational infetime of project equipments.</li> <li>Sample employment contract has been provided.</li> <li>Under the government mission to 100% electrify the households &amp; villages in India, the government provided the villages which are not electrified with the current grid i.e., households/ villages which not connected to the regional/national grid. Thus, the PP (Cygni) is not required to prepare a p feasibility report. The dissemination work of off- grid solar DC home electricity system has been provided the government agencies / DISCOMs. The identification of un electrified villages has been done the government agencies/ DICSOM through REC (Rural Electrification Commission, a government be and they didn't share the report with the PP siting it's confidential. The government agencies/ DISCO has provided the villages list, since the government has declared that these villages are not connect to the grid.</li> <li>Template end-user provided.</li> <li>Duly signed end user provided.</li> <li>Technical specs of the equipment has been provided.</li> <li>PIs refer response to point no 4.</li> <li>cample work order has been provided.</li> <li>Complaint book are kept with the respective Cygni office located in the respective states.</li> </ol>	has are pre- ided by ody) M's cted not
12. Solar availability certificate from the supplier has been provided.	
Documentation provided by project participant	
1.Start date.pdf	
2 Marranty and Onarational Cartificate ndf	
2. Warranty and Operational Certificate.pdf	
7. carbon waiver samples	
7. carbon waiver samples 8.Technical specification lead acid battery.pdf	
<ul> <li>7. carbon waiver samples</li> <li>8. Technical specification lead acid battery.pdf</li> <li>8.1.GTP - solar DC Specification.pdf</li> </ul>	
<ul> <li>7. carbon waiver samples</li> <li>8. Technical specification lead acid battery.pdf</li> <li>8.1.GTP - solar DC Specification.pdf</li> <li>10.Sample work orders documents -</li> </ul>	
<ul> <li>2. wairanty and Operational Certificate.pdf</li> <li>7. carbon waiver samples</li> <li>8. Technical specification lead acid battery.pdf</li> <li>8.1.GTP - solar DC Specification.pdf</li> <li>10.Sample work orders documents -</li> <li>12.Solar Availability Certificate.pdf</li> </ul>	
2. warranty and Operational Certificate.pdf         7. carbon waiver samples         8. Technical specification lead acid battery.pdf         8.1.GTP - solar DC Specification.pdf         10.Sample work orders documents -         12.Solar Availability Certificate.pdf         DOE assessment         Date: 28/02/2020	
2. Wall and Operational Certificate.pdf     7. carbon waiver samples     8. Technical specification lead acid battery.pdf     8.1.GTP - solar DC Specification.pdf     10.Sample work orders documents -     12.Solar Availability Certificate.pdf     DOE assessment     Det assessment     Date: 28/02/2020     1. PP has provided a signed consent between CYGNI and the end-user (Tarien Tepon) dated 21/03/20	)18.
2. Wall and Operational Certificate.pdf     7. carbon waiver samples     8. Technical specification lead acid battery.pdf     8.1.GTP - solar DC Specification.pdf     10.Sample work orders documents -     12.Solar Availability Certificate.pdf     DOE assessment     DOE assessment     Det = 28/02/2020     1. PP has provided a signed consent between CYGNI and the end-user (Tarjen Tepon) dated 21/03/20     which states that the end-user has received the Solar DC inverterless system on the mentioned date	)18, ate.
<ul> <li>2. Walking and Operational Certificate.pdf</li> <li>7. carbon waiver samples</li> <li>8. Technical specification lead acid battery.pdf</li> <li>8.1.GTP - solar DC Specification.pdf</li> <li>10.Sample work orders documents -</li> <li>12.Solar Availability Certificate.pdf</li> <li>DOE assessment</li> <li>DOE assessment</li> <li>Dete: 28/02/2020</li> <li>1. PP has provided a signed consent between CYGNI and the end-user (Tarjen Tepon) dated 21/03/20 which states that the end-user has received the Solar DC inverterless system on the mentioned date the same is considered as start date for the project activity in the PDD. CL point is closed.</li> </ul>	)18, ate.
<ul> <li>2. Walking and Operational Certificate.pdf</li> <li>7. carbon waiver samples</li> <li>8. Technical specification lead acid battery.pdf</li> <li>8.1.GTP - solar DC Specification.pdf</li> <li>10.Sample work orders documents -</li> <li>12.Solar Availability Certificate.pdf</li> <li>DOE assessment</li> <li>DOE assessment</li> <li>Dete: 28/02/2020</li> <li>1. PP has provided a signed consent between CYGNI and the end-user (Tarjen Tepon) dated 21/03/20 which states that the end-user has received the Solar DC inverterless system on the mentioned date the same is considered as start date for the project activity in the PDD. CL point is closed.</li> <li>2. PP has provided a declaration stating that the operational lifetime of all equipment being installed allows.</li> </ul>	)18, ate.
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 PP has provided the duly signed carbon waiver rights to DOE. The same has been assessed and found appropriate. CL point is closed.

- 8. Technical specifications of the Solar DC inverterless systems and lead acid battery by IIT, Madras have been provided by PP to DOE. However, the PP has not provided documentary evidence to substantiate that project equipment comply with applicable international standards or comparable national, regional or local standards/guidelines as mentioned in the technical specification documents. CL point is not closed.
- 9. The project for implementation of solar DC inverterless system for rural electrification of villages in different states on India has been awarded to the PP under Deen Dayal Upadhyaya Gram Jyoti Yojana by the state power development corporation or the renewable energy development agency of the state. Under this scheme the identification of villages that are not electrified has been done by the state government agencies/ DICSOM through REC (Rural Electrification Commission, a government body). The contract between the state government agencies/ DICSOM and the PP specifies the number of villages including the number of households where the solar inverterless system has to be installed. The baseline survey work is carried out by the government agencies/ DICSOM of the respective states and the only responsibility of the PP in the entire scheme of things is to install and maintain the systems during their warranty period. Thus in essence the baseline itself is declared by the government that the villages/ households are not connected to the grid i.e., off-grid households. The same was also cross-checked during OSV through interview with representatives of PP and relevant authorities. CL point is closed.
- 10. PP has provided sample work order or contract for states viz, Assam, Meghalya, Manipur, Jammu & Kashmir, Rajasthan and Madhya Pradesh. CL point is closed.
- 11. PP has clarified that Complaint book or grievance book is kept at the Cygni office located in the respective states where the project has been implemented or will be implemented. The same was verified during the OSV. CL point is closed.
- 12. PP has provided certificate from the manufacturer has been to VT, which provides a value of 20.24 for solar availability and it includes the calculations for estimating the output from the system (i.e. weather data used, system characteristics and losses assumed are described). The same is acceptable to VT. CL point is closed.

#### CL is still open.

**Project participant response** 

3. Sample employee service agreement document has been provided.

- 4. GS preliminary document has been submitted.
- 8. The test certificates complying the international standard has been provided.

#### Documentation provided by project participant

- 3. Employee Service Agreement.pdf
- 4. GS review final docs.zip

#### 8. IEC certificates .zip

#### DOE assessment

Date: 12/03/2020

Date: 07/03/2020

3. PP has provided employment contract of employees for highlighting terms of reference, the responsibilities, terms of payment and terms of detachment. The same has been reviewed by the VT and found acceptable. CL point is closed.

4. PP has provided the report for Preliminary Review under Gold Standard for the Global Goals. The same has been reviewed by the VT and all the comments therein have been taken into account during the validation. CL point is closed.

8. PP has provided the documentary evidence to substantiate that project equipment comply with applicable international standards or comparable national, regional or local standards/guidelines as mentioned in the technical specification documents. The provided test certificates have been reviewed by VT and found acceptable. CL point is closed.

CL is closed.

	. –				
CL ID	05	Section no.	D.5	Date: 05/02/2020	
Description of CL					
In section E.	1 of PDD and LSC re	port, it has beer	n stated that the LSC was onl	ly conducted in Assam. PP	
shall explain	how the same is deer	med adequate v	when the project is to be imple	emented in other states viz,	
Madhya Pradesh, J&K, Meghalaya and Manipur.					
Project participant response Date: 25/02/2020					
1. the LSC is conducted in Assam, since the maximum number of the solar DC systems are disseminated					
in Assam. Moreover, the system is similar in configuration in all other states, and the baseline is similar i.e					
the HH are not connected to regional/national grid. The use of electricity is similar in nature across all over					
India and thus, PP has conducted the LSC in Assam only.					
Documentation provided by project participant					

		CDM-VAL-FORM
N/A		
DOE assessment		Date: 05/03/2020
PP has explained that the reaunder the project activity had different states covered by the as well the baseline is provide project activity are not base difference in usage pattern of provided by the PP is accept	ason for conducting LSC in Assam is as been distributed here. Furthermon he project are same and the baseline ded by the government agencies. Fur d on the hours of usage of the tech of the technology by the end-users is able to VT.	that the maximum number of equipment re, the system distributed all across the is same. Moreover, in all the other states rthermore, the ERs being accrued by the inology by the end-users and hence the of no real essence here. The justification
CL is closed.		
CL ID 06	Section no. Appendix-6	Date: 05/02/2020
Description of CL		
PP shall provide report of As	sessment of safeguarding principles i	to substantiate that there are no risks and piect activity
Project participant respons		Date: 24/02/2020
The LSC report has been pro	ovided.	
Documentation provided b	v project participant	
LSC report		
DOE assessment		Date: 28/02/2020
PP has provided the LSC re	port for the subject project that was	approved by GS. Section D of the LSC
report provides the details of	of assessment of safeguarding prin	ciples (both own assessment and blind
exercise) and their assessm	ent and it has been clearly substanti	ated that there are no risks and adverse
outcomes of the technologies	s implemented under this project activ	vity. The same is acceptable to VT.
	-	
CL is closed.		
Table 2. CAR from this	s validation	
Table 2.CAR from thiCAR ID01	s validation Section no. D.1	Date: 05/02/2020
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The description in section A.1, cover page and other section of the PDD has been revised to make the number of beneficiary households (50,000 households) consistent throughout the document.

CAR is closed.

CAR ID	02	Section no.	D.1	Date: 05/02/2020	
Description	Description of CAR				

In section A.2 of the PDD, eligibility of the project under Gold Standard has not been provided in accordance	į
with the requirements stipulated under section 3.1.1 of GS4GG – Principles and requirements (v1.2).	

Furthermore, the reference of section 3.1.1.1 provided in the referred section is incorrect.				
Project participant response	Date: 24/02/2020			
Revised PDD under section A.2 includeds now the eligibility criteria as per GS4GG section 3.1.1.				
Documentation provided by project participant				
Revised PDD				
DOF assessment	Date: 03/03/2020			

Section A.2 of the PDD has been revised to provide eligibility of the project under Gold Standard has not been provided in accordance with the requirements stipulated under section 3.1.1 of GS4GG – Principles and requirements (v1.2). The same has been assessed by VT and found appropriate.

Moreover, the PP has removed the incorrect reference of section 3.1.1.1 from section A.2 of the revised PDD.

CAR is closed.

CAR ID 03	Section no.	D.1 / D.2.5	Date: 05/02/2020		
Description of CAR					
Section A.5 of PDD states that, "T household users that displace foss generators, and fossil fuel based m	The project invo sil fuel use, suo nini-grids."	blves the installation of sola th as in fuel-based lighting i	r DC based PV systems for systems, stand-alone power		
However, the same is not consister	nt with the desc	ription provided in section A	.1.		
Furthermore, there is no clarity on accordance with the methodology.	type of custom	ners (end-users) being targe	ted by the project activity in		
Moreover, as required by GS4GG - will contribute positively to SDGs id	– PDD template lentified above	e, the section doesn't provide on the cover page.	e information on how the PA		
Project participant response			Date: 24/02/2020		
The statement has been corrected systems for household users that d The project description is made cor Also the tyoe of consumers are incl Now the PDD includes information	since ""The pro lisplace fossil fu nsistent now. luded in the rev on the positive	ject involves the installation lel use, such as in fuel-base ised PDD. impact of SDGs .	of solar DC based PV d lighting systems only".		
Documentation provided by proje	ect participant				
Revised PDD					
DOE assessment			Date: DD03/03/2020		
Section A.5 of the PDD has been revised by to correctly state that the project involves the installation of solar DC based PV systems for household users that displace fossil fuel – based lighting systems. Moreover, the end-users being targeted by the project activity are individual households. The same was also cross-checked during OSV through interviews with the end-users.					
The description in section A.1 and A.5 of the PDD has been revised by PP to make it consistent and clearly state that the consumer in the project activity are Type I.					
Furthermore, section A.5 of the PDD has been adequately revised and now provides information on the positive contribution of project activity on identified SDGs. The same is in line with the requirements of GS4GG – PDD template.					
CAR is closed.					
CAR ID 04	Section no.	D.1 / D.2.1	Date: 05/02/2020		
Description of CAR					
During the OSV, it was observed that some of the systems distributed under the project activity are powered					

PDD.

Project participant response

Date: 24/02/2020

Only 5% on the systems are having lead acid based battery, the rest of the systems are similar in all households. The description of Lead acid battery is also included.

Documentation	provided by	project	partici	oant

#### Revised PDD DOE assessment

Date: 03/03/2020

Section A.5 of the PDD has been revised to include information on lead acid battery systems that was part of the solar DC inverterless system distributed in the project activity.

CAR is closed.

	)	05	Section no.	D.2.1	Date: 05/02/2020	
Descri	ption	of CAR				
In secti 1. TI 4 re	on B.2 he just of the quirec	2 of the PDD: iffication provided b applied methodolo I to submit docume ers connected by th	y PP for applicabil gy is incomplete v ntary evidence to	ity of project to the requirement with regards to details of app substantiate that At least 75 shall be bouseholds	ents stated under paragraph liances. Furthermore, PP is per cent (by number) of the	
2. Fo of al	orjusti intern so inc videnc	fying applicability to ational standards o licate the standard es to substantiate ti	requirements of p r comparable national f(s) applied for m he same.	aragraph 6 of the applied met onal, regional or local standar nain project equipment and	hodology, Specify the name ds/guidelines. Furthermore, also provide documentary	
3. In	justifi onsiste	ication provided for ent with the value pr	applicability crite	rion 7 the volume of ERs pr age and ER sheet.	ovided is incorrect and not	
Proiec	t parti	cipant response			Date: 24/02/2020	
1.Now	the cri	iteria 4 has been ela	aborated.			
2. The 3. Now	interna the va	ational standards ha	as been included ι riteria 7 has been	under paragraph 6 of the app corrected.	lied methodology	
Docum	nentat	ion provided by p	roject participant			
Revise	d PDD	)				
End-us	er agr	reements				
DOE as	ssess	ment			Date: DD/MM/YYYY	
<ol> <li>Justification provided by PP for applicability of project to the requirements stated under paragraph 4 of the applied methodology has been revised to provide the details of the appliances being provided along with the solar DC inverterless systems. Furthermore, PP has provided en-user agreements to substantiate that at least 75 per cent (by number) of the consumers connected by the project activity are households. The same was also checked by VT during the OSV. CAR point is closed.</li> <li>PP has specified the name of international standards or comparable national standards that the main project equipment complies with. The main project equipment is Solar PV module, which shall be manufactured in compliance with the standard IEC 61730 -1 &amp; IEC 61215 which is equivalent to national standard BIS 14286. However, the PP has not provided documentary evidence to substantiate that project equipment comply with applicable international standards or comparable national, regional or local standards/guidelines as mentioned in the technical specification documents. CAR point is open.</li> <li>In justification provided for applicability criterion 7 the volume of ERs provided has been corrected and made consistent with the value provided on cover page and ER sheet. CAR point is closed.</li> </ol>						
Projec	t parti	cipant response			Date: 07/03/2020	
2. IECO 1730-1 & IEC 01223 & also CPRI test report documents has been provided.						
Documentation provided by project participant						
IEC cer	rtificat	e.zip				
DOE as	ssess	ment	1 11 1		Date: 12/03/2020	
2. PP has provided the documentary evidence to substantiate that the main project equipment is Solar PV module, has been manufactured in compliance with the standard IEC 61730 -1 & IEC 61215 which is equivalent to national standard BIS 14286 and comply with applicable international standards or comparable national, regional or local standards/guidelines as mentioned in the technical specification documents. The provided test certificates have been reviewed by VT and found acceptable. CAR point is closed.						
UAK IS CIOSED.						
CAR IE	)	06	Section no.	D.2.4	Date: 05/02/2020	

**Description of CAR** 

#### In section B.3 of PDD:

- 1. A flow diagram of the project boundary, physically delineating the project, based on the description provided in section A.5 above has not been provided as required by GS4GG PDD template.
- 2. The description of the project boundary provided is not in accordance with paragraph 15-17 of the applied methodology.

#### Project participant response

Date: 24/02/2020

1. Now the revised PDD includes a flow diagram depicting the project boundary. 2.More information on the project boundary is included as per para 15-18 of the applied methodology. **Documentation provided by project participant** 

## Revised PDD

Date: 03/03/2020

Section B.3 of the PDD has been revised to provide a flow diagram of the project boundary, physically delineating the project, based on the description provided in section A.5 of the PDD. The same is in line with the requirements of GS4GG – PDD template.

Furthermore, the description of project boundary has been revised to meet the requirements of para 15 - 17 of the applied methodology AMS-III. BL (version 01.0). The same is deemed appropriate by the VT.

CAR is closed.

**DOE** assessment

CAR ID	07	Section no.	D.2.5	Date: 05/02/2020	
Description	of CAR		•		
The establis	shment of baseline so	cenario in secti	on B.4 of PDD, is not in ac	cordance with the applied	
methodology	/:				
1. Con	sumer types has not b	een defined			
2. Base	eline scenario in acco	ordance with the	e consumer type has not be	en clearly established and	
aem	ionstrated.	d regulte peod to	be provided for grace checki	ing of requilte	
3. Das	enne survey report and		be provided for cross-checki	Date: 24/02/2020	
1 Povisod P	DD includes consume	r typo		Date. 24/02/2020	
1 Raseline s	scenario is described v	vith more clarity	Please note that there is onl	v one type of consumer	
involved in t	his proiect i e Type –	l only		y one type of consumer	
3. There are	no baseline survev re	port available fo	or this project, since the as pe	r the methodoloav the	
baseline is tl	hat the consumers are	not connected	to the regional/national grid ie	.e household which are	
unelectrified	in the baseline. In the	project activity,	the government agencies has	s provided the list of the	
unelectrified	villages which in turns	demonstrate th	nat in the baseline the HH are	not connected to the grid.	
Documenta	tion provided by proj	ject participant	1		
Revised PD	D				
DOE assess	sment			Date: 03/03/2020	
Section B.4	of the PDD has been	revised to clear	ly state that the end-users ur	nder the project activity are	
classified as	consumer Type I as	they are not co	onnected to the grid altogeth	er. Moreover, the baseline	
scenario in accordance with the type of customer i.e., Type I has been clearly stated i.e., in absence of the					
project activity the lighting needs were being fulfilled through use of fossil-fuel based lighting system. The					
same was also cross-checked during USV through interviews with the end-users.					
Furthermore	it has been clearly	evolained that	the project for implementatio	n of solar DC inverterless	
system for r	ral electrification of vill	explained that	t states on India has been awa	arded to the PP under Deen	
Daval Upadł	nyaya Gram Jyoti Yoia	na by the state	power development corporation	on or the renewable energy	
developmen	t agency of the state 1	Inder this scher	me the identification of villages	s that are not electrified has	
been done b	been done by the state government agencies/ DICSOM through REC (Rural Electrification Commission a				
government	body). The contract b	etween the stat	e government agencies/ DIC	SOM and the PP specifies	
the number	of villages including th	ne number of ho	useholds where the solar inv	erterless system has to be	
installed. Th	e baseline survey wor	k is carried out	by the government agencies/	DICSOM of the respective	
states and t	he only responsibility	of the PP in th	e entire scheme of things is	to install and maintain the	
systems dur	ing their warranty peri	iod. Thus, in es	sence the baseline itself is de	eclared by the government	
that the villa	ges/ households are	not connected t	o the grid i.e., off-grid house	holds. The same was also	
cross-checke	ed during OSV through	n interview with	representatives of PP and rele	evant authorities.	
CAR is close	ed.				

	CAR ID	08	Section no.	D.2.6	Date: 05/02/2020
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## **Description of CAR**

In section B.5 of PDD, the reference of paragraph and tool provided for demonstration of additionality is				
incorrect.				
Project participant response	Date: 24/02/2020			
Section B.5 has been revised and corrected provided the correct references for	demonstration of			
additonality.				
Documentation provided by project participant				
Revised PDD				
DOE assessment	Date: 03/03/2020			
The additionality argument in section B.5 of the PDD has been revised and now uses paragraph 4.1.9 (a)				
Positive list (Annex B) of GS4GG - community service activity requirements (version 1.2) to demonstrate				
the additionality of the project activity. The same is acceptable to VT.				

CAR is closed.

CAR ID	09	Section no.	D.2.8	Date: 05/02/2020		
Description	of CAR					
Reference nu	umber for SDG targets	have not been	provided in the table under se	ection B.6.1 of the PDD.		
Project parti	cipant response			Date: 24/02/2020		
The referenc revised PDD	The reference number of SDG targets has been now provided in the table under section B.6.1 of the revised PDD.					
Documentation provided by project participant						
Revised PDD						
DOE assess	ment			Date: DD/MM/YYYY		
The table provided for SDG's in Section B.6.1 of the PDD has been revised to provide the reference number for corresponding SDG targets.						

CAR is closed.

		Continue		Data: 05/00/0000		
Deserin		Section no.	D.2.7	Date: 05/02/2020		
Descrip	DIION OF CAR	d that antian D2	has been ented for coloulati			
	on B.o.z of PDD, it is stated	a inal option D3	has been opled for calculation	on of deemed consumption.		
noweve	". It is stated that default a	u de la littre factor	120/ is considered as not th	a applied methodology DD		
1.	shall explain how the sar chosen for this project act	ne is applicable ivity.	to the project activity with	option D3, which has been		
2.	PP shall provide project fe to substantiate the value of	easibility report p of 20.24% used t	provided by either manufactur for solar availability data.	rer of supplier of the system		
3.	PP has used equation 1	0 of applied me	ethodology for calculation of	annual average electricity		
	consumption of Type-I co	nsumers. PP sh	nall explain how this equation	n is applicable to the type-I		
	consumers being targeted	by the project a	ctivity.			
4.	PP has used equation 3 c	of the applied m	ethodology for calculating ba	seline emissions for Type-I		
	consumer but the information	tion on selected	default factors for the project	activity is missing.		
5.	PP has stated that there a	are no leakage	emissions associated with th	e project activity. However,		
	PP shall explain how the r	equirements of	35 and 36 of the methodology	y is being complied with.		
Project	participant response			Date: 24/02/2020		
1. The s	sentence that "default value	e of 12% has be	en considered" is corrected ir	n the revised PDD, since		
the PP I	has used 20.24% as per su	upplier letter.				
2.Suppl	ier certificate on the solar a	availability factor	has been provided now.			
3.Equat	ion 10 is not used for type	— I.				
4. The c	lefaults factors are mention	ned below the e	quation 3 of the applied meth	odology in the revised PDD		
for base	for baseline emission for Type – I.					
5. Now	5. Now the requirement as per para 35 & 36 of the methodology has been included under leakage section.					
Documentation provided by project participant						
Revised	Revised PDD					
Solar A	vailability certificate					
DOE as	sessment			Date: 05/03/2020		

- 1. The statement on default solar availability factor of 12% has been removed from the section B.6.1 of the revised PDD. CAR point is closed.
- 2. PP has provided certificate from the manufacturer has been to VT, which provides a value of 20.24 for solar availability and it includes the calculations for estimating the output from the system (i.e. weather data used, system characteristics and losses assumed are described). CAR point is closed.
- 3. Section B.6.1 of the PDD has been revised to remove the reference equation 10 of applied methodology for calculation of annual average electricity consumption of Type-I consumers as the same is not applicable for Type I customers. CAR point is closed.
- 4. Section B.6.1 of the PDD has been revised to information on selected default factors for the project activity which are applicable while using the equation 3 of the applied methodology for calculating baseline emissions for Type-I consumer. CAR point is closed.
- 5. The description of leakage emissions provided in section B.6.1 of te PDD has been revised to state:
  - a. No leakage is involved in the project activity, since there is no construction of transmission line, as all the system are Individual renewable energy system. The same is in compliance with requirements of paragraph 35 of the applied methodology.
  - b. No leakage involved is envisaged for the project activity as no energy generating equipment's is transferred from another project activity and all the Solar DC systems are newly manufactured. The same is in compliance with requirements of paragraph 36 of the applied methodology.

CAR is closed.

CAR ID	11	Section no.	D.2.7	Date: 05/02/2020	
Descripti	on of CAR				
In section	B.6.4 of the PDD:				
1. PP	1. PP has provided annual hours of operation of DC equipment as 8760. PP shall explain how the				
ani	nual hours of operation	has been determ	ined?		
2. Th	e calculation of <b>"Total E</b>	E <b>C per year</b> " dep	icted in the table is incorrect a	as the applied methodology	
req	uires the consumption	to be calculated	as the installed capacity of the	e project renewable energy	
gei	eration systems multip	lied by an annua	average value for availability	/capacity factor.	
3. Av	alue of 20% has been u	sed for "Default	solar availability factor as p	er meth", which is incorrect.	
Mo	reover, the choice of s	source for solar a	availability and the value is i	nconsistent throughout the	
do	cument.			de come cont	
4. Va	ue of Baseline emissiol	ns is incorrect an	a inconsistent throughout the		
Project p	articipant response				
1. the ann	ual nrs of 8760 is as pe	er the applied me	nodology foot note 11, page	19. 	
2.now the	total EC per year has t	een made inline	with the applied methodology	I.e. the consumption to	
De calcula	ted as the installed cap	acity of the proje	ct renewable energy generation	on systems multiplied by	
an annual	average value for avail	apility/capacity is	icior been corrected in ell places i	n the revised RDD	
3. the value	le OI 20.24% SOlar avall	ability factor has	been corrected in all places in	n the revised PDD.	
4. The val	tetion provided by pr	n nas been corre	cied in all places in the revise	ea PDD.	
Documer Bovisod F	מווטון איז	oject participant			
	ssmont			Data: 05/03/2020	
	someric	in of 8760 hours	used for appual bours of app	ration of DC aquipmont in	
I. FF IId	B 6 1 of the PDD is be	sed on the foot r	used for annual hours of open	ad methodology. The same	
is deer	ned appropriate by the	VT CAR point is	closed	ed methodology. The same	
2 The ca	lculation of "Total EC n	er vear" as provi	ded in the table has been corr	ected and is now	
calcula	ited as the product of in	stalled canacity	of the project renewable energy	av generation systems	
multip	ied by an annual average	ne value for avail	ability/capacity factor. The sa	me is in accordance with	
the rec	wirements of paragraph	54 of the applie	d methodology CAR is closed	d	
3 The va	lue of solar availability	factor used in se	ction B 6 4 of the PDD has be	en corrected to 20 24%	
which	s based on the certifica	ate from the man	facturer. The source and the	value of solar availability	
factor has been made consistent throughout the document. CAR point is closed					
4. Sectio	n B.6.4 of the PDD has	been revised to	correct the value of baseline e	emissions as 36,605	
tCO <sub>2</sub> /y	ear. The same has bee	n made consiste	nt within the documents and a	also with the ER sheet.	
CAR	oint is closed.				
·					
CAR is clo	osed.				
	10		<b>D</b> 0 0	B ( 05/00/0000	

In section B.7.1 of the PDD, for parameter EC<sub>T1,x,y</sub> (Electricity consumption at Type I consumer):
1. Under monitoring frequency, PP has listed Option B and Option D. PP shall clearly specify which option has been chosen in accordance with the choices made for calculating the consumption of the customers.

Project participant response	Date: 24/02/2020
PDD has been corrected and now only Option D is mentioned under monitoring	frequency,
Documentation provided by project participant	
Revised PDD	
DOE assessment	Date: 05/03/2020
The monitoring frequency for parameter ECT1,x,y (Electricity consumption at T B.7.1 of the PDD has been revised to clearly state that Option D – once at operational systems would still need to be monitored as per data /parameter tab compliance with the applied methodology.	ype I consumer) in section installation (proportion of le 2 below). The same is in

CAR is closed.

CAR ID	13	Section no.	D.2.8	Date: 05/02/2020				
Description of CAR								
In section B.	In section B.7.3 of PDD, PP has not provided any information on when Renewable electricity generation							
systems can	systems can be counted as operating in accordance with requirements under paragraph 55 of methodology?							
Project participant response Date: 24/02/2020								
The requirement as per para 55 has been included now under section B.7.3 in the revised PDD i.e., Renewable electricity generation systems can be counted as operating only if they can be shown to be able to produce electricity by means of one of the following: (a) The manufacturer's warranty; or (b) Regular maintenance arrangement (e.g. with suppliers/distributors/ implementers);								
Documenta	tion provided by pro	ject participant	:					
Revised PDI	0							
DOE assessment Date: 05/03/2020								
Section B.7.3 of the PDD has been revised to state that Renewable electricity generation systems can be counted as operating only if they can be shown to be able to produce electricity by means of one of the following: i. The manufacturer's warranty; or ii. Regular maintenance arrangement (e.g. with suppliers/distributors/ implementers);								
The same is in line with the requirements of paragraph 55 of methodology.								

#### Table 3.FAR from this validation

FAR ID	Sectio	n no.	Date:		
Description	Description of FAR				
Project part	Project participant response Date: DD/MM/YYYY				
Documentat	tion provided by project part	icipant			
GS VVB ass	essment		Date: DD/MM/YYYY		

## Appendix 5: Methodology Applicability

The project applies AMS III. BL "Integrated methodology for electrification of communities" (version 01.0) /B01/ Applicability criteria for the baseline methodology /B01/ are assessed by the validation team by means of document review and interview. It is agreed in the validation team's opinion that the project activity fully meets the criteria as described below:

Applicability Criteria of applied methodology AMS III.BL (version 1.0) /B01/	Assessment of GS VVB
§3: This methodology is applicable in situations where consumers that were not connected to a national/regional grid, prior to project implementation are supplied with electricity generated from the project activity. It is also applicable in situations where a fraction of consumers that were supplied with electricity from a fossil based individual energy system or fossil fuel based mini-grid prior to the implementation of the project, are supplied with electricity from the project activity (e.g. moving from carbon intensive mini-grid to less carbon intensive grid or mini grid).	As verified during the on-site inspection and through review of PDD /01/ and letter of award for rural electrification work under DDG programme of DDUGJY /06/, validation team confirms that the project activity consists of consumers (households) which were not connected to a national/regional grid, prior to project implementation and are being supplied with solar DC inverterless systems for generation of electricity. <b>Conclusion:</b> Based on the above assessment, the validation team concludes that the project activity complies with the requirements of the applicability criterion as laid out in §3 of the applied methodology /B01/.
§4: Electricity consumers may include households, commercial facilities such as shops, public services/buildings and small, medium and micro enterprises (SMMEs). Applications may include lighting, household electrical appliances (e.g. refrigerators, TV, radio), public lighting and water pumps. At least 75 per cent (by number) of the consumers connected by the project activity shall be households.	As verified during the on-site inspection and through review of PDD /01/, letter of award for rural electrification work under DDG programme of DDUGJY /06/ and distribution records /07/, validation team confirms that the electricity consumers are households only (100%). Furthermore, the validation team confirms that the appliances include one (01) DC mobile charger, one (01) DC socket, five (05) DC bulb and one (01) BLDC ceiling fan. <b>Conclusion:</b> Based on the above assessment, the validation team concludes that the project activity complies with the requirements of the applicability criterion as laid out in §4 of the applied methodology /B01/.
<ul> <li>§5: This methodology is applicable to electrification of a community of consumers which is achieved through one or more of the following technologies/measures:</li> <li>(a) New construction of individual energy systems (renewable or hybrid) such as roof-top solar photovoltaic systems or hybrid energy systems;</li> <li>(b) Rehabilitation (or refurbishment) of individual energy systems, mini-grid or hybrid energy system may be undertaken, if it can be demonstrated that the existing system(s) i) are not part of another CDM activity; ii) are non-operational and iii) require a substantial investment for them to be rehabilitated to or above the original electricity generation capacity. To demonstrate compliance with this condition.</li> </ul>	As verified during the on-site inspection and through review of PDD /01/, technical specifications of solar DC inverterless systems /08/, /09/ validation team confirms that in the project activity electrification of a community of consumers is achieved through construction of new individual renewable energy systems i.e., Roof top solar photovoltaic DC based system. <b>Conclusion:</b> Based on the above assessment, the validation team concludes that the project activity complies with the requirements of the applicability criterion as laid out in §5 (a) of the applied methodology /B01/.

<ul> <li>the project participants shall provide documentation that:</li> <li>(i) The existing system has not generated electricity, or that alternative fuels (e.g. kerosene) have been used, for at least six months prior to Project Design Document (PDD) or SSC-CPA-DD submittal; and</li> <li>(ii) Substantial investments are required to rehabilitate the existing systems (e.g. investments greater than half of the cost to install a new power generation system with the same electricity generation capacity);</li> </ul>	
<ul> <li>(c) Installation or extension of a mini-grid that distributes electricity generated from renewable energy systems or hybrid energy systems;</li> <li>(d) Hybridization of existing fossil fuel powered</li> </ul>	
<ul> <li>mini-grids using renewable energy systems;</li> <li>(e) Extension of a grid (national or regional) to supply new consumers as well as consumers currently connected to mini-grid.</li> </ul>	
§6: Project equipment shall comply with applicable international standards or comparable national, regional or local standards/guidelines and, when relevant, the PDD shall indicate the standard(s) applied for main project equipment.	The main project equipment is Solar PV module, has been manufactured in compliance with the standard IEC 61730 -1 and 2 & IEC 61215 which is equivalent to national standard BIS 14286. The project equipment complies with applicable international standards as mentioned in the technical specification documents. The same has been confirmed through review of test certificates
§7: For projects involving the installation of hydro power plants with reservoirs the requirements prescribed under AMS-I.D shall be followed.	As verified during the on-site inspection and through review of PDD /01/, technical specifications of solar DC inverterless systems /08/, /09/ validation team confirms that in the project activity electrification of a community of consumers is achieved through construction of new individual renewable energy systems i.e., Roof top solar photovoltaic DC based system. Thus, the project activity doesn't involve the installation of hydro power plants with reservoirs.
§8: Measures are limited to those that result in emission reductions of less than or equal to 60 kt CO <sub>2</sub> equivalent annually.	Conclusion: Based on the above assessment, the validation team concludes that the requirements of the applicability criterion as laid out in §7 of the applied methodology/B01/ is not applicable to the project activity. Through the review of PDD /01/ and ER sheet /02/, VT confirms that the project activity result in emission reductions of 36,605 tCO <sub>2</sub> equivalent annually. Conclusion: Based on the above assessment, the validation
	team concludes that the project activity complies with the requirements of the applicability criterion as laid out in §8 of the applied methodology /B01/.

# **Appendix 6: Sustainability Validation Report**

## 1. Project type eligibility screen

The proposed project "Solar DC programme in off-grid regions in India" is a small-scale project implemented in India. The project is applying CDM methodology AMS III. BL "Integrated methodology for electrification of communities" (version 01.0) /B01/.

The project activity involving electrification of a community of consumers is through construction of new individual renewable energy systems i.e., Roof top solar photovoltaic DC based system is eligible under GS according to section 3.1.1 of the GS4GG Principles and Requirements document /B09/. Furthermore, Sub-clause 4.1.3 states that '*A project type is automatically eligible for GS Certification if there are approved GS Activity Requirements and/or GS Impact Quantification Methodologies associated with it or as referenced in GS Product Requirements'.* The GS has published the Community Services Activity Requirements /B02/, which include Renewable energy (solar photovoltaic) projects, under which the project activity falls. Hence, the project activity falls under the automatic eligibility list of projects.

Hence, the project is eligible under the Gold Standard.

## 2. Preliminary review under Gold Standard for the Global Goals

Gold standard has carried out a preliminary review of the project before listing the project. There were no FAR/s during this review by GS and all the findings were closed by the Gold Standard.

## 3. Sustainable Development Goals (SDG) outcomes

SDG	Chosen SDG target
	<b>SDG target – 3.9:</b> By 2030, substantially reduce the number of
Goal 3: Good health and	deaths and illnesses from hazardous chemicals and air, water
woll being	and soil pollution and contamination.
wen being	Indicator 3.9.1 - Mortality rate attributed to household and
	ambient air pollution
	SDG target - 7.1: By 2030, ensure universal access to
Goal 7: Affordable and	affordable, reliable and modern energy services
Clean Energy	<b>Indicator 7.1.2</b> – Proportion of population with primary reliance
	on clean fuels and technology
	<b>SDG target – 13.3:</b> Improve education, awareness-raising and
Goal 13: Climate Action	human and institutional capacity on climate change mitigation,
	adaptation, impact reduction and early warning

As per the PDD /01/, the relevant SDG targets are:

Validation team confirms that the outcome for SDG 13 will be quantified as CO<sub>2</sub> emission reductions by applying the methodology AMS III. BL "Integrated methodology for electrification of communities" (version 01.0) /B01/. The project proponent has opted SDG 13 outcome to be certified as 'Certified SDG 13 Impact Statement' allowing the generation of carbon credits (VERs).

As per the PDD, the other SDG impacts of this project activity (SDG 3 and SDG 7) will not be certified as 'Certified Impact Statements' and therefore, for these SDG impacts no specific methodologies for estimation and monitoring will be applied.

## 4. Safeguarding principle Assessment

According to GS4GG Safeguarding Principles and Requirements document for detailed guidance on carrying out assessment as summarized below:

Safeguarding principles	Assessment questions	Assessment of relevance to the project (Yes/ potentially/ no)	Justification including mitigation measures	Assessment by the validation team
	Social &	& Economic Safeguar	rding Principles	
1. Human Rights	1. 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.	No	The project aims to promote and penetrate the adoption of clean and reliable energy supply in rural areas leading to a reduction in air pollution. It does not concern issues of human rights, dignity and cultural property of indigenous people. India enacted the Protection of Human Rights Act in 1993, later amended in 2006. Among other the Act established the National Human Right Commission to safeguard and investigate in any complaint regarding human rights violations.	Appropriateness for this safeguarding principle was validated and confirmed through review of /B03/ and OSV interviews with: • Representatives of Project Participant • Local Stakeholders
	2. The Project shall not discriminate with regards to participation and inclusion.	No	Project is targeted towards economically backward and marginalized members of the community who could benefit from the project and whose socio-economic condition could be improved due to the project- specifically households of	Miligation measure. N/A

			· · · · · · · · · · · · · · · · · · ·	
			indigenous people. The project helps to enhance participation in more inclusive manner.	
2. Gender Equality and Women's Rights Requirement 1	1. The Project shall complete the following gender assessment questions in order to inform Requirements 2-4, below: Is there a possibility that the Project might reduce or put at risk women's access to or control of resources, entitlements and benefits?	No	The project enhances the women's access and entitlement of benefits. Since the women were involved in household activities (cooking etc.,) for which they earlier used fossil fuel based lighting system, will be the direct user of the DC based solar lighting system, it will benefit women by reducing their exposure to the indoor air pollution thereby improving their health. In addition, the decrease in quantity of fossil fuel required after the installation of Solar DC based lighting system will reduce workload of women for the collection of fossil fuel kerosene. Reduced workload for fuel collection results in time saving that the women can use for other	Appropriateness for this safeguarding principle was validated and confirmed through review of /B03/ and OSV interviews with: • Representatives of Project Participant • Local Stakeholders
	Is there a possibility that the Project can adversely affect men and women in marginalized or vulnerable communities (e.g., potential increased burden on women or social isolation of men)?	No	The project will not adversely affect men and women in marginalized or vulnerable communities. Implementation of the project will contribute towards preservation of common resources in form of "fossil fuel". Households duties related to cooking, teaching kids and cleaning utensils remain with women. The project therefore tends to decrease burden on women and won't result in social isolation of men.	Mitigation measure: N/A
	Is there a possibility that the Project	No	The project duly accounts the gender	

might not take into account gender roles and the abilities of women or men to participate in the decisions/designs of the project's activities (such as lack of time, childcare duties, low literacy or educational levels, or societal discrimination)?		roles. Time saving is one of the key benefits from the project which the beneficiary can utilize to fulfill their gender roles. With the saved time, one can perform the respective gender role more effectively.	
Does the Project take into account gender roles and the abilities of women or men to benefit from the Project's activities (e.g., Does the project criteria ensure that it includes minority groups or landless peoples)?	No	Inherited to its design, the project intends to benefit the minority groups in need of assistance, specifically the tribal and indigenous people. The project shall also make every effort to include landless people in its design. Benefits from the project is expected to culminate in form of creation of entrepreneurial opportunities While the focus is on capacitating women to take advantage of the entrepreneurial opportunity, the project shall not deprive men from the families of minority groups or the landless people to take advantage of the capacity building activities.	
Does the Project design contribute to an increase in women's workload that adds to their care responsibilities or that prevents them from engaging in other activities?	No	No, the project is not designed such that it increases workload of women and their care responsibilities. This will enable them to engage in other activities.	
Would the Project potentially reproduce or further deepen discrimination against women based on gender, for instance, regarding their full participation in design and implementation or access to	No	The project will enhance social participation and decision-making role of women. Moreover, the women are expected to develop entrepreneurial skills which will enable them economically to deal	

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	opportunities and benefits?		with the household problems. The potential of the project to enable women economically will help reduce discrimination against women rather than deepening it.	
	Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and priorities of women and men in accessing and managing environmental goods and services?	No	Limiting women's ability to use, develop and protect natural resources is not likely with the project implementation. Moreover, the project will create awareness among the people on the usage of clean energy.	
	Is there a likelihood that the proposed Project would expose women and girls to further risks or hazards?	No	No, the proposed technology for dissemination is relatively safe compared to the traditional fossil fuel- based lighting sysytem. This will decrease the exposure of women and girls to further risks and hazard.	
Requirement 2	2. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women. exploitation or human trafficking.	No	No, the project doesn't directly or indirectly lead to/contribute to adverse impacts on gender equality. In contrast, the project will contribute to health and well-being of women. Moreover, the project will deploy adequate measures to foster social status of women.	
Requirement 3	3. Projects shall apply the principles of nondiscrimination, equal treatment, and equal pay for equal work.	No	The project shall embrace the spirit of the Labor Regulations providing equal remuneration to the male and female workers without making discrimination when they are engaged in works of similar nature. For all the staffs employed by the project, principle of equal treatment shall prevail.	<ul> <li>Appropriateness for this safeguarding principle was validated and confirmed through review of /B03/ and OSV interviews with:</li> <li>Representatives of Project Participant</li> <li>Local Stakeholders</li> </ul>

				Mitigation measure: N/A
Requirement 4	4. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks.	No	There are no specific gender risks identified during the project design. Howsoever, if any assessment is required to frame gender risks associated with the project, the project participant ensures its full commitment to do so.	<ul> <li>Appropriateness for this safeguarding principle was validated and confirmed through review of /B03/ and OSV interviews with:</li> <li>Representatives of Project Participant</li> <li>Local Stakeholders</li> <li>Mitigation measure: N/A</li> </ul>
Requirement 5	5. Based on the Preliminary Review assessment of Requirement 1, above, Gold Standard may require that the Project seek the input of an Expert Stakeholder and to include their recommendations in the Project design.	No	Not applicable.	Not Applicable
3. Community Health, Safety and Working Conditions	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 installation of the Solar DC based system doesn't involve any activity that trigger safety requirements.	<ul> <li>Appropriateness for this safeguarding principle was validated and confirmed through OSV interviews with:</li> <li>Representatives of Project Participant</li> <li>Local Stakeholders</li> <li>Mitigation measure: N/A</li> </ul>
4. Cultural Heritage, Indigenous Peoples, Displacement and Resettlement	The Project shall not involve or be complicit in the alteration, damage or removal of any sites, objects or structures of significant cultural heritage.	No	The project units will be simple and small in dimension. The project will not result in any change in people's habits because of substitution of fuel. Therefore, the result of this project won't damage or remove cultural heritage, since the project is implemented in the households of	<ul> <li>Appropriateness for this safeguarding principle was validated and confirmed through review of /B03/ and OSV interviews with:</li> <li>Representatives of Project Participant</li> </ul>

			families.	Local Stakeholders
			Concerning the Protection of Cultural and Natural Heritage in 1977.	Mitigation measure: N/A
	<ul> <li>Where a Project proposes to utilise</li> <li>Cultural Heritage, including the</li> <li>knowledge, innovations, or practices</li> <li>of local communities, affected</li> <li>communities shall be informed of:</li> <li>(a) Their rights under Applicable Law,</li> <li>(b) The scope and nature of the</li> <li>proposed commercial</li> <li>development; and</li> <li>(c) The potential consequences of</li> <li>such development.</li> </ul>	No	The project is service oriented and doesn't involve commercialization of any activities. Therefore the safeguarding principle under discussion will not be triggered by the project.	
	The Project shall provide for equitable sharing of benefits from commercialization of such knowledge, innovation, or practice, consistent with their customs and traditions.	No	The project is service oriented and doesn't involve commercialization of any activities. Therefore, the safeguarding principle under discussion will not be triggered by the project.	
	The opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being included in the Project design.	No	The project is service oriented and doesn't involve commercialization of any activities. Therefore, the safeguarding principle under discussion will not be triggered by the project.	
5. Corruption	The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects.	No	The project doesn't involve any transaction of cash and/or kind between the project participant and the beneficiary. The project participant will facilitate the implementation of the project by capacitating the local people with necessary technical expertise to	<ul> <li>Appropriateness for this safeguarding principle was validated and confirmed through review of /B03/ and OSV interviews with:</li> <li>Representatives of Project Participant</li> <li>Local Stakeholders</li> </ul>

			prepare and install the stoves. There are no specific permit and/or approvals required to implement the project. Finally, anything generated as project revenue shall be spent towards the project monitoring, repair and maintenance, project operation and costs against project verification and issuance of the emission reduction credits. Therefore, the project is not expected to involve any corrupt practices or reinforce the same.	Mitigation measure: N/A
6. Economic Impacts	The Project Developer shall ensure that there is no forced labour and that all employment is in compliance with national labour and occupational health and safety laws, with obligations under international law, and consistency with the principles and standards embodied in the International Labour Organization (ILO) fundamental conventions. Where these are contradictory and a breach of one or other cannot be avoided, then guidance shall be sought from Gold Standard.	No	The project is not labour intensive. Since it doesn't involve major construction works, employing labours is not within the scope of the project. Project will train the local people to properly maintain the system. While training the persons, project shall make sure that the trained persons are grown up citizen of the country. Therefore, the safeguarding principle under discussion will not be triggered.	Appropriateness for this safeguarding principle was validated and confirmed through review of /B03/ and OSV interviews with: • Representatives of Project Participant • Representatives of Project Participant
	Workers shall be able to establish and join labour organisations.	No	As discussed earlier, the project intends to encourage Household end users to become self-reliant in terms of their energy needs. Since the project is not stand-alone establishment, there are not any proper "labours" working for the project. Further, the people working	Local Stakeholders Mitigation measure: N/A

-	Working agreements with all		for the project will not be salaried staffs to the project. Therefore, the possibility of workers forming labour unions and joining labour organizations is not applicable for the project.	
	<ul> <li>individual workers shall be documented and implemented.</li> <li>These shall at minimum comprise:</li> <li>(a) Working hours (must not exceed 48 hours per week on a regular basis), AND</li> <li>(b) Duties and tasks, AND</li> <li>(c) Remuneration (must include provision for payment of overtime), AND</li> <li>(d) Modalities on health insurance, AND</li> <li>(e) Modalities on termination of the contract with provision for voluntary resignation by employee, AND</li> <li>(f) Provision for annual leave of not less than 10 days per year, not including sick and casual leave.</li> </ul>	No	Project employs few administrative staffs to support secretarial functions. These staffs work 40 hours/week (6 days/week). Each staff is provided with a set terms of reference highlighting the responsibilities, terms of payment and terms of detachment. Since all the aspects related to working modality prevail.	
	The Project Developer shall justify that the employment model applied is locally and culturally appropriate. Stakeholder shall be sought and demonstrated as being included in the Project design.	No	The project design inherently requires capacitating local people to support the solar project. As such, context of local employment is well deliberated in the project design. Therefore, the project doesn't trigger the safeguards requirement under consideration.	
	5. Child labour, as defined by the ILO Minimum Age Convention is not allowed. The Project Developer shall	No	All the staffs recruited by the project as an employee or as training participants are age verified. For this,	

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	use adequate and verifiable mechanisms for age verification in recruitment procedures. Exceptions are children for work on their families' property as long as: (a) Their compulsory schooling (minimum of 6 schooling years) is not hindered, AND (b) The tasks they perform do not harm their physical and mental development, AND (c) The opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being included in the Project design.		the project uses citizenship certificate as the means of verification. Therefore, the project doesn't trigger the safeguards requirement under consideration.	
	6. 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.	No	any of the activity of the project. The Solar DC based system will be constructed of Solar PV module, Charge controller, Bulb, DC fan, Sockets, and wires. These materials do not contain any toxic subtracts	
	Environmen	tal & Ecological Safe	guarding Principles	
7. Climate and Energy	Projects shall not increase emissions over the Baseline Scenario unless this is specifically allowed within Activity Requirements or Gold Standard Approved Methodologies.	No	The project involved installation of solar PV arrays connected to the household to provide electricity. This equipment is a very crucial aspect of the household activities. It replaces the fossil fuel used in the baseline scenario.	<ul> <li>Appropriateness for this safeguarding principle was validated and confirmed through review of /B03/ and OSV interviews with:</li> <li>Representatives of Project Participant</li> <li>Local Stakeholders</li> </ul>

	The Project shall not affect the availability and reliability of energy supply to other users.	No	ultimately the GHG emission reduction. Installation and use of the solar DC based system avoiding the use of diesel. Therefore, the availability and reliability of energy supply to other users is not compromised.	Mitigation measure: N/A
8. Water	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	The project doesn't involve any activity related to extraction of surface or ground water. Therefore, the safeguarding principle under consideration will not be triggered by the project.	Appropriateness for this safeguarding principle was validated and confirmed through review of /B03/ and OSV interviews with: • Representatives of Project Participant • Local Stakeholders Mitigation measure: N/A
9. Environment, ecology and land use	Does the Project involve the use of land and soil for production of crops or other products?	No	The project doesn't involve any activity related to extraction of surface or ground water. Therefore, the safeguarding principle under consideration will not be triggered by the project.	Appropriateness for this safeguarding principle was validated and confirmed through review of /B03/ and OSV interviews with: • Representatives of Project Participant • Local Stakeholders Mitigation measure: N/A

In summary, CCIPL has validated and concluded that the DNHA for the project has been conducted appropriately, according to GS4GG requirements, based on accurate information with all the reference sources as indicated in the PDD /01/. Therefore, in CCIPL's opinion the project has no harmful impact according to DNHA.

## 5. Data and parameters fixed ex-ante

Relevant SDG Indicator	SDG 13, Climate action
Data/parameter	EF <sub>CO2,T1</sub>
Description	Emission factor for type I consumer – up to 0.055 MWh/year
Unit	tCO <sub>2</sub> /MWh
Value	6.8
Verified Source of data	Default value in accordance with §31 of AMS-III.BL (version 01.0) /B01/
Assessment	Default value in accordance with §31 of AMS-III.BL (version 01.0) /B01/

Relevant SDG Indicator	SDG 13, Climate action
Data/parameter	EF <sub>CO2,T1</sub>
Description	Emission factor for type I consumer – between 0.055 to 0.125 MWh/year
Unit	tCO <sub>2</sub> /MWh
Value	1.3
Verified Source of data	Default value in accordance with §31 of AMS-III.BL (version 01.0) /B01/
Assessment	Default value in accordance with §31 of AMS-III.BL (version 01.0) /B01/

Relevant SDG Indicator	SDG 13, Climate action
Data/parameter	Solar Availability factor
Description	Annual average solar availability factor based on manufacturer's data
Unit	%
Value	20.24
Verified Source of data	Manufacturer's certificate /18/

	The value for the parameter is based on the annual average value for availability from the project feasibility report /18/ provided by the manufacturer/supplier of the system. The report includes the calculations for estimating the		
Assessment	output from the system. The same is in accordance with the approach provided under §54 (c) of the applied methodology /B01/.		

Relevant SDG Indicator	SDG 13, Climate action
Data/parameter	Annual Hours
Description	Annual hours
Unit	hr
Value	8760
Verified Source of data	AMS-III.BL (version 01.0) /B01/
Assessment	Footnote 11 of applied methodology AMS-III.BL (version 01.0) /B01/

Relevant SDG Indicator	SDG 13, Climate action
Data/parameter	Type of DC equipment installed at households
Description	Type of DC equipment installed at households
Unit	N/A
	DC Fan: 01
Value	DC LED Bulb: 05 Nos
	DC mobile Charging socket: 01
Verified Source of data	Distribution Record /XX/
Assessment	The same was confirmed by VT through review of the equipment distribution record /07/ and through on-site visit and interviews with recipient households and representatives of PP.

## 6. Data and parameters to be monitored

Relevant SDG Indicator	SDG 13, Climate action
Data/parameter	EC <sub>T1,x,y</sub>
Description	Electricity consumption at Type I
Measurement methods, procedures	Option D – recording of capacity at installation, based on manufacturer's specifications. Deemed consumption will be estimated as described in §54 (c) of applied methodology AMS-III.BL (version 01.0).
Monitoring frequency	once at installation
Assessment	This is in accordance with the applied methodology AMS-III.BL (version 01.0) /B01/ and thus acceptable to the validation team.

Relevant SDG Indicator	SDG 13, Climate action
Data/parameter	Proportion of operational systems and connections
Description	Check for continued operation or access to the grid or mini-grid
Measurement methods, procedures	Annual/biennial checks that individual systems and connections to the grid or mini-grid are still working, by taking a statistically significant sample of consumers. Use 90/10 and 95/10 precision for annual and biennial checks, respectively
Monitoring frequency	Annual/biennial
Assessment	This is in accordance with the applied methodology AMS-III.BL (version 01.0) /B01/ and thus acceptable to the validation team.

Relevant SDG Indicator	SDG 13, Climate action
Data/parameter	Number of Household
Description	Total number of household where the DC based solar system is installed
Measurement methods, procedures	Distribution records
Monitoring frequency	Continuous

Assessment	This is in accordance with the applied methodology AMS-III.BL (version 01.0) /B01/ and thus acceptable to the
	validation team.

Relevant SDG Indicator	SDG 13, Climate action
Data/parameter	Air quality
Description	Users' perception on smoke reduction and Incidence of disease
Measurement methods, procedures	Air quality will be assessed through users interviews during the HH User Survey.
Monitoring frequency	Annual/biennial
Assessment	This is in accordance with the monitoring plan for SDG indicator presented in PDD /01/ and is acceptable to the validation team.

Relevant SDG Indicator	SDG 03, Good health and well-being
Data/parameter	Air quality
Description	Users' perception on smoke reduction and Incidence of disease
Measurement methods, procedures	Air quality will be assessed through users interviews during the HH User Survey.
Monitoring frequency	Annual/biennial
Assessment	This is in accordance with the monitoring plan for SDG indicator presented in PDD /01/ and is acceptable to the validation team.

Relevant SDG Indicator	SDG 07, Affordable and clean energy
Data/parameter	Access to affordable and clean energy services
Description	Total number of household where the DC based solar system is installed
Measurement methods, procedures	From distribution records & Sample survey to confirm if project Solar DC system are operational. Operational status will confirm that the users are accessed to affordable and clean energy
Monitoring frequency	Annual
Assessment	This is in accordance with the monitoring plan for SDG indicator presented in PDD /01/ and is acceptable to the validation team.