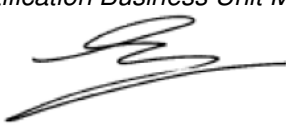




**Validation report form for renewal of CDM programme of activities period
(Version 02.0)**

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

BASIC INFORMATION

Title and UNFCCC reference number of the programme of activities (PoA)	Installation of Solar Home Systems in Bangladesh (UNFCCC reference number: 2765) ¹
Number and duration of the next period	2 nd renewal period : (26/06/2019 to 25/06/2026)
Version number of the validation report	00
Completion date of the validation report	02/07/2020
Version number of PoA-DD to which this report applies	11
Coordinating/managing entity (CME)	Infrastructure Development Company Limited (IDCOL)
Host Parties	Bangladesh
Applied methodologies and standardized baselines	AMS-I.A. ver. 17- Electricity generation by the user Standardized Baseline: Not Applicable
Mandatory sectoral scopes	01
Conditional sectoral scopes, if applicable	NA
Estimated amount of annual average GHG emission reductions or GHG removals by sinks in the next programme of activities period	- tCO _{2e}
Name and UNFCCC reference number of the DOE	LGAI Technological Center, S.A. (Applus+ Certification) UNFCCC Ref. No.: E-0032
Name, position and signature of the approver of the validation report	Mr. Juan Sendín Caballero Applus+ Certification Business Unit Managing Director Signature: 

¹ https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/ZSI6WP0ODGRQ8UYKXB3MHTL957JVAE/view

SECTION A. Executive summary

Installation of Solar Home Systems in Bangladesh Program of Activities aims at installation of SHS (Solar Home Systems) in households and other users to provide electricity who are not connected to grid in Bangladesh

1. General operating and implementing framework of PoA:

“ Installation of Solar Home Systems in Bangladesh PoA supports the installation of Solar Home Systems in the households and other users in Bangladesh to provide electricity that have no access to grid connected power. Each small-scale CDM Program Activity (referred to later on as CPA) under this PoA comprises SHSs of typical capacities ranging from 20 to 200 Wp depending upon the amount of electricity planned to be used. This PoA is a voluntary action being coordinated and managed by Infrastructure Development Company Limited (Referred as IDCOL or the coordinating/managing entity - CME). IDCOL works closely with and implements the program through Participating Organisations (POs) which, have given up their ownership of emission reductions to IDCOL.

2. Policy/measure or stated goal of the PoA

The objective of this PoA is to develop a platform for overcoming institutional, financial and structural hurdles to advance rural electrification in Bangladesh. With the support of additional CDM finance, IDCOL intends to achieve this goal by substantially increasing the number of solar home systems (SHSs) in Bangladesh.

Implementation of SHSs in household in remote and rural areas through this PoA will reduce dependency on imported fossil fuels such as kerosene and diesel as SHS directly replaces the usage of kerosene oil for lighting purpose and diesel for electricity generation.

Then, the baseline scenario is that the kerosene oil will be continue to use for lighting purpose in the absence of grid connectivity of households

Validation Scope: The scope is defined as an independent and objective review of the POA-DD for renewal of PoA period. The PoA-DD is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board, including the approved baseline and monitoring methodology AMS-I.A version 17. The validation was based on the requirements in the CDM validation and verification standard for programm of activities, version 02.

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 document.

Validation Process: The project assessment is based on the “CDM validation and verification standard for programm of activities, version 02 and is conducted using standard auditing techniques to assess the correctness of the information provided by the project participants. Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the CDM project activity are appointed.

As a part of validation of renewal of period for PoA, the members of the assessment team carried out:

- I A desk review of the project design documentation;
- II Follow-up interviews with project stakeholders;
- III The resolution of outstanding issues and the issuance of the final validation report and opinion.

The prepared validation report and other supporting documents then undergo an internal quality control at the HQ (Accredited office) before being submitted to the CDM-EB.

In order to ensure transparency, assumptions must be clear and stated explicitly and background material must also be referenced. Applus+ Certification has developed a specific Checklist customized for the project. The checklist demonstrates, in a transparent manner, the project criteria (requirements), discussion on each criterion by the assessment team, and the results from validating the identified criteria.

Appointment of the assessment team

According to the sectoral scope / technical area and experience in the sectoral or national business environment, Applus+ Certification has composed a project assessment team in accordance with the appointment rules in the internal Quality Management System of Applus+ Certification.

The composition of audit team shall be approved by Applus+ Certification ensuring that the required skills are covered by the team.

The four qualification levels for team members that are assigned by formal appointment rules are as presented below:

- Lead Auditor (LA).
- Auditor (A) / Auditor in Training (AiT).
- Technical Expert (TE).
- Technical Reviewer (TR).

The sectoral scope / technical area knowledge linked to the applied methodology/ies shall be covered by the assessment team.

Name	Role	SS Coverage	TA Coverage	Financial aspect	Host country experience
Mr. Pankaj Kumar	LA/TE	YES	YES	YES	YES
Mr. Simon Shen	TR	YES	YES	YES	NA

The complete list of CVs is included as Appendix 2 of this report.

Document review

The Project Design Document submitted by the Client was reviewed against the approved methodology and other relevant criteria to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources like 3rd party Government documents has been done. A complete list of all documents and evidence material reviewed is included in Appendix 3 of this report.

Follow-up interviews

Applus+ Certification performed interviews, telephone conferences with project stakeholders to confirm selected information and to resolve issues identified in the document review. The detail is provided in section C.2 and C.3 of this report.

Resolution of Clarification and Corrective Action Request

The objective of this phase of the validation of renewal of PoA period was to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified for Applus+ Certification positive conclusion on the project design. The Corrective Action Requests and Clarification Requests raised by Applus+ Certification were resolved during communications between the Client and Applus+ Certification to guarantee the transparency of the validation process, the concerns raised and responses given are summarized in Appendix 4 below.

The final PDD version 11 submitted by PP on 29/06/2020 serves as the basis for the final assessment presented. Additional changes to the project during the validation process are not considered to be significant with respect to the main CDM objectives. The two CDM main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

Internal quality control

As final step of a validation of the final documentation including the validation report and the checklist have to undergo an internal quality control by the technical review committee, i.e. each report has to be finally approved either by the head of the technical review committee or the deputy. In case one of these two

persons is part of the assessment team approval can only be given by the other one to avoid any conflict of Interest.

After confirmation of the PP the validation opinion and relevant documents are submitted to the EB through the UNFCCC web-platform.

Conclusion

Applus+ Certification has performed a validation (renewal of period) of the “Installation of Solar Home Systems in Bangladesh”. The validation was performed on the basis of UNFCCC criteria and host country criteria, as well as criteria, e.g. AMS-I.A version 17, given to provide for consistent project operations, monitoring and reporting.

The review of the project design documentation and the subsequent follow-up interviews have provided Applus+ Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria. The project will hence be recommended by Applus+ Certification for registration with the UNFCCC.

Applus+ Certification has received a confirmation from the host Party that the project activity assists it in achieving sustainable development.

By displacing kerosene based lighting with electricity generated from solar home systems a renewable source, the project results in reductions of CO_{2e} emissions that are real, measurable and give long-term benefits to the mitigation of climate change. The program of activity is intended for reduction of CO₂ emissions by displacing kerosene lamps and diesel generators through implementation of similar CPAs. As a result, the project results in reductions of CO₂ emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project 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 activity.

The validation has been performed following the requirements of the latest version of the CDM validation and verification standard for programme of activities, version 02 and on the basis of the contractual agreement. The single purpose of this report is its use during the registration process as part of the CDM/UNFCCC project cycle.

SECTION B. Validation team, technical reviewer and approver

B.1. Validation team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interview(s)	Validation findings
1.	Lead Auditor/ Technical Expert	O R	Kumar	Pankaj	True Quality Certification s Private Limited- Outsourced entity	YES	NO	YES	YES

B.2. Technical reviewer and approver of the validation report for renewal of PoA period

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical Reviewer	EI	Shen	Simon	Applus+ Certification
2.	Approver	IR	Sendín Caballero	Juan	Applus+ Certification

SECTION C. Means of validation**C.1. Desk/document review**

The details of the document observed during desk review /validation process are listed below in Appendix 3 of this report.

C.2. On-site inspection

As per the requirement of sec. 7.1.3 and para 183 of CDM validation and verification standard for programme of activities, version 02, Para (a), assessment team didn't conduct site visit for 2nd renewal of registered PoA (UNFCCC reference number: 2765). To validate the POA design, eligibility criteria CPA to be included, monitoring & management practices as mentioned in the PoA-DD; assessment team has conducted telephonic interviews with CME. After telephonic interviews with concerned CME person; assessment team concluded that the design PoA is same as envisaged in 1st PoA period. There is no change in the eligibility of PoA design or operation and monitoring practices as mentioned in the registered PoA of 1st period which can alter the applicability or additionality of the project activity/methodology applied i.e. AMS.I.A version 17. Assessment team therefore of the opinion that project is will be implemented as described in the registered PoA- DD for 1st period and no change is envisaged for the proposed 2nd PoA period.

No.	Activity performed on-site	Site location	Date	Team member
NA	NA	NA	NA	NA

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Haque	Nazmul	Director and Head of Investment ²	24/06/2020	POA design, monitoring & management practices of the PoA DD, eligibility criteria CPA to be included etc	Mr. Pankaj Kumar

C.4. Sampling approach

The assessment team did not apply any sampling approach for the PoA-DD assessment.

C.5. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) raised

Area of validation findings	No. of CL	No. of CAR	No. of FAR
Programme of activities			
Compliance with PoA-DD form	00	02	00
Programme of activities period	00	00	00
Coordinating/managing entity and the project participants	00	00	00
Post-registration changes	00	00	00
Generic component project activities			
Application and selection of methodologies and standardized baselines	00	02	00
Validity of original baseline or its update	00	01	00
Estimated emission reductions or net anthropogenic removals	00	00	00
Validity of monitoring plan	00	01	00
Eligibility criteria for inclusion of CPAs	00	00	00
Others (please specify)	00	02	00
Financing mechanism, sampling			

² Telephonic interview only.

Total	00	08	00
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SECTION D. Validation findings**D.1. Programme of activities****D.1.1. Compliance with PoA-DD form**

Means of validation	Assessment team checked the PoA DD version 09.0 form supplied by the project participant and found that the latest form applicable in the UNFCCC web site is used for the presentation of the PDD.
Findings	No findings raised for the section
Conclusion	<p>The program envisages the installation of solar home systems (SHS) in Bangladesh through implementation of various CPAs. The program system boundaries are clearly defined. The PoA consist of implementation of Solar Household Systems (SHS).</p> <p>The updated PoA-DD has been completed using the valid version of the PoA-DD form, following the instructions therein. The information transferred to the later valid version of the PoA-DD form is materially the same as that in the registered PoA-DD.</p>

D.1.2. Programme of activities period

Means of validation	<p>Assessment team checked the PoA DD version 11 supplied by the project participant and found that the period as mentioned in the 2nd renewal period is correct.</p> <p>The PoA period is checked as per UN home page (reference number : 2765) and discussion with Client.</p>
Findings	No findings raised for the section
Conclusion	This is 2 nd PoA period from 26/06/2019 to 25/06/2026

D.1.3. Coordinating/managing entity and the project participants

Means of validation	The CME and PP names were checked from UN homepage : https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/ZSI6WP0ODGRQ8UYKXB3MHTL957JVAE/view		
Findings	No findings raised for the section		
Conclusion	Coordinating/Managing Entity	Infrastructure Development Company Limited (IDCOL)	
	There is change in name of party and PP involved as compare to 1 st PoA-period. In 2 nd PoA-period as the CME is same as in 1 st PoA period and registered PoA but another party Denmark and PP (IBRD) removed as checked from MoC		
	Assessment team also confirmed that the PP name is correct as mentioned in the 1 st PoA period. The detail are as below:		

D.1.4. Post-registration changes

Type of post-registration changes (PRCs)	Confirmation (Y/N)	Validation report for PRCs	
		Version	Completion date
Corrections	N	NA	NA
Inclusion of monitoring plan	N	NA	NA
Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents	N	NA	NA
Changes to the programme design	N	NA	NA
Addition of CPA inclusion template	N	NA	NA
Changes specific to afforestation and reforestation activities	N	NA	NA
Change of coordinating/managing entity	N	NA	NA

D.2. Generic component project activities**D.2.1. Application and selection of methodologies and standardized baselines**

Means of validation	<p>The assessment team has validated the documentation referred to in the revised PoA-DD for renewal of period and verified the documentation content for verifying the justification of the applicability of the methodology AMS-I.A version 17 and confirmed that the documentation referred to in the PoA-DD is correctly quoted and interpreted.</p> <p>Moreover, assessment team have the applied following alternate route to confirm the detail as mentioned in the PoA-DD applied for renewal.</p> <ul style="list-style-type: none">- Interview with the concerned person(CME) mentioned in this report <p>The assessment of the project's compliance with the applicability criteria of AMS-I.A version 17 are documented in detail in section I.2 of the PoA DD</p>											
Findings	CAR 05 was raised during the validation process and closed successfully.											
Conclusion	<p>The applied baseline methodology is justified as it has been demonstrated that the proposed project activity is:</p> <table><tr><td>Applicability of methodologies and standardized baselines. The applicability criteria of AMS I.A. version 17 are the following:</td><td colspan="2">Methodology AMS I.A. version 17 is applicable to an generic CPA under the proposed PoA because:</td></tr><tr><td>This category comprises renewable electricity generation units, such as solar photovoltaic, hydro, wind and renewable biomass that supply electricity to individual households/users or groups of households/users.</td><td colspan="2">The SHS units are the renewable energy generation units that supply individual households with a small amount of electricity in areas not connected by grid power.</td></tr><tr><td>The methodology is applicable to project activities that involve new installations (greenfield) or replace existing onsite fossil-fuel-fired generation.</td><td colspan="2">The SHS units are greenfield in nature meant to replace existing fossil fuel usage of kerosene for lighting application and diesel in generator sets for charging batteries as confirmed during telecon with PP representative.</td></tr></table>			Applicability of methodologies and standardized baselines. The applicability criteria of AMS I.A. version 17 are the following:	Methodology AMS I.A. version 17 is applicable to an generic CPA under the proposed PoA because:		This category comprises renewable electricity generation units, such as solar photovoltaic, hydro, wind and renewable biomass that supply electricity to individual households/users or groups of households/users.	The SHS units are the renewable energy generation units that supply individual households with a small amount of electricity in areas not connected by grid power.		The methodology is applicable to project activities that involve new installations (greenfield) or replace existing onsite fossil-fuel-fired generation.	The SHS units are greenfield in nature meant to replace existing fossil fuel usage of kerosene for lighting application and diesel in generator sets for charging batteries as confirmed during telecon with PP representative.	
Applicability of methodologies and standardized baselines. The applicability criteria of AMS I.A. version 17 are the following:	Methodology AMS I.A. version 17 is applicable to an generic CPA under the proposed PoA because:											
This category comprises renewable electricity generation units, such as solar photovoltaic, hydro, wind and renewable biomass that supply electricity to individual households/users or groups of households/users.	The SHS units are the renewable energy generation units that supply individual households with a small amount of electricity in areas not connected by grid power.											
The methodology is applicable to project activities that involve new installations (greenfield) or replace existing onsite fossil-fuel-fired generation.	The SHS units are greenfield in nature meant to replace existing fossil fuel usage of kerosene for lighting application and diesel in generator sets for charging batteries as confirmed during telecon with PP representative.											

	<p>The applicability of the methodology is limited to individual households and users that do not have a grid connection except when:</p> <ul style="list-style-type: none"> a) A group of households or users are supplied with electricity through a standalone mini-grid powered by renewable energy generation unit(s) where the capacity of the generating units does not exceed 15 MW (i.e. the sum of installed capacities of all renewable energy units connected to the mini-grid is less than 15 MW) e.g. a community-based stand-alone off-the-grid renewable electricity systems; or b) For renewable energy-based lighting applications, the emission reductions per system is less than 5 tonnes of CO₂e a year and it shall be demonstrated that that fossil fuels would have been used in the absence of the project activity by: <ul style="list-style-type: none"> i. A representative sample survey of target households; or ii. Official statistics from the host country government agencies; <p>A group of households or users are connected to a grid prior to the start date of the project activity (or the start date of validation with due justification), however the electricity from the grid is available for the households and users for less than 36 hours in any given calendar month during the crediting period or the grid connected household coverage in the host country is less than 50%.</p>	<p>The SHS units are greenfield in nature and the individual household do not have a grid connection confirmed with monitoring data base.</p>
	<p>The methodology is not applicable to project activities that include units that will be connected to the grid at any time during the crediting period.</p>	<p>IDCOL Inspectors randomly inspect the newly installed SHS to confirm the technical standards and that the SHS has been installed in a rural area to a non-grid connected household. An Inspection Report is produced. The results of the Inspection Report are fed into the IDCOL data base. If the inspection Report indicates that a SHS has been installed in conflict with the program eligibility criteria such as, in an urban area or to a grid connected household, a Discrepancy Report is generated. The SHS then becomes ineligible under the program and is accordingly not eligible to receive any IDCOL financing. A clear system exists for excluding ineligible SHS under the program.</p> <p>Validation team checked IDCOL</p>

		data base and sample survey form and confirm that all SHS installed are not connected to grid at any time.
	Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology: a. The project activity is implemented in an existing reservoir with no change in the volume of reservoir; b. The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity is greater than 4 W/m ² ; The project activity results in new reservoirs and the power density of the power plant, is greater than 4 W/m ² .	Not applicable as this is not a hydro power plant.
	Combined heat and power (cogeneration) systems are not eligible under this category	Not applicable as this is not a Combined heat and power (cogeneration) system.
	If the electricity generation unit added has both renewable and non-renewable components (e.g. a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the unit added co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.	Not applicable as this project don't have non-renewable component.
	Project activities that involve retrofit or replacement of an existing renewable electricity generation unit are included in this category. To qualify as a small-scale project, the total output of the modified or retrofitted unit shall not exceed the limit of 15 MW.	Not Applicable as this project doesn't involves retrofit or replacement of existing renewable electricity generation.
	In the case of project activities that involve the addition of renewable electricity generation units to an existing renewable electricity generation facility, the total capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.	Not applicable as programme do not involve addition of renewable electricity generation units to an existing renewable electricity generation facility.
	In cases where the project activity utilizes biomass, the applicability conditions of "TOOL16: Project and leakage emissions from biomass" shall apply.	Not applicable as the project activity doesn't utilizes biomass.

D.2.2. Validity of original baseline or its update

Means of validation	The baseline scenario as depicted in the PoA-DD version 11 is checked during telecon with PP representative and also during the interview with the consultants..
Findings	CAR 06 was raised during the validation process and closed successfully
Conclusion	Assessment team referred "Methodological tool (EB 66, Annex 47) "Assessment of the validity of the original / current baseline and update of the baseline at the renewal of the crediting period." (Version 03.0.1)" and CDM validation and verification standard for program activities, version 02" to check the originality of the baseline. Following are the observation of the assessment team regarding selected baseline for the project activity in this present 2 nd renewable period:

Step 1.1 (EB 66, Annex 47): Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies

The baseline scenario identified at the validation of the CDM PoA was the burning of kerosene for lighting purpose in the households and diesel for generator. Thus this PoA was a voluntary initiative which intends to replace kerosene and diesel usage from renewable source. The CME was not bound to start this initiative (replacement of kerosene for lighting purpose); hence absence of project activity does not lead to any continued baseline practice for CME within their scope whereas the continued operation of the project activity would continue to replace kerosene and other fossil fuels in the project boundary. Hence, the same baseline as identified in the previous crediting period is still valid for the project. Therefore, the assessment of the changes in market characteristics is not required for the renewal of the project's crediting period under CDM.

However, DoE also checked the host country requirements and guidelines and confirm that there is no mandatory regulation to replace kerosene in the host country for lighting purposes.

The program to provide electricity to users in off-grid, remote and rural areas with SHS. These SHS users currently have no access to grid connected electricity and currently use kerosene for lighting.

According to the statistical year book of Bangladesh year book 2018, table 6.14, in total rural population, 12% still use kerosene for lighting which is likely to continue in the absence of the program. It has been confirmed from Statistics year book of Bangladesh from year 2011 to 2018 that there is gradual decrease in dependency on kerosene for lighting purpose over the years. In year 2011, total 45.6% of population dependent on kerosene oil for lighting which came down to 12% as per Statistical year book of Bangladesh, 2018 (latest available data). It was observed by reviewing annual statistical year book that there is gradual decrease in dependency on kerosene oil by deployment of SHS over the years which is clear indication that programme is on track to achieve its intended objectives and goals of replacement of kerosene oil for lighting purposes in households of rural areas of Bangladesh.

Furthermore, the CME has considered REB weblink (<http://www.reb.gov.bd/site/page/b36a45d6-6ed2-4477-9cb1-831bd0b13d90/-0>) which confirms kerosene is being used by households in absence of electricity.

Step 1.2 (EB 66, Annex 47) : Assess the impact of circumstances

There are no new circumstances that can impact the original baseline.

The program is to implement solar home systems (SHS) in remote and rural areas that have no access to grid connected power. These SHS users currently have no access to grid connected electricity and currently use kerosene for lighting purpose.

In total rural population, currently kerosene is the source of lighting for off grid population which is likely to continue in the absence of the program. DOE checked latest available data by Govt. of Bangladesh (Statistical Year Book , 2018) which confirms that still 12% population uses kerosene oil for lighting purposes. The baseline scenario identified at the validation of the project activity was the continuation of the current practice without any investment.

Step 1.3 (EB 66, Annex 47): Assess whether the continuation of the use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested

Assessment team confirm that this PoA was a voluntary initiative which intends to replace kerosene and other fossil fuel from renewable source. There is no mandatory regulation for CME for this initiative; hence absence of project activity (i.e. the investment) does not lead to any continued baseline practice for CME

	<p>within their scope. The baseline scenario was the kerosene using by household in off grid areas and the program to provide electricity to users in off-grid, remote and rural areas with SHS. The project activity in green field project and it is unlikely that any baseline equipment or investment involved in project activity. Hence, the same baseline as identified in the previous crediting period is still valid for the project. Therefore, the assessment of the changes in market characteristics is not required for the renewal of the PoA period under CDM.</p> <p><u>Step 1.4(EB 66, Annex 47): Assessment of the validity of the data and parameters</u></p> <p>This step stipulates that “Where emission factors, values or emission benchmarks are used and determined only once for the crediting period, they should be updated, except if the emission factors, values or emission benchmarks are based on the historical situation at the site of the project activity prior to the implementation of the project and cannot be updated because the historical situation does not exist anymore as a result of the CDM PoA.”</p> <p>There is no change in ex ante data and parameters since 1st PoA period. Application of Steps 1.1, 1.2, 1.3 and 1.4 confirmed that the current baseline is valid for the Second PoA period.</p> <p>Step 2.1: Update the current baseline As evident from the explanation provided above the baseline scenario remains unchanged.</p> <p>Updated the baseline emissions based on the latest approved version of the methodology applicable to the project activity for the subsequent crediting period, without reassessing the baseline scenario.</p> <p>Step 2.2: Update the data and parameters The updated Data and/or parameter are followed for estimating the baseline emissions</p> <p>Hence as per AMS-I.A version 17 (latest Methodology), the baseline of the project is as follows: “The baseline emissions are calculated based on the fuel consumption of the technology in use or that would have been used to generate the equivalent quantity of energy in the absence of the project activity”</p> <p>The above selected baseline is correct and thus applicable to the project activity and in line with approved methodology for the applied renewable of crediting period.</p>
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D.2.3. Estimated emission reductions or net anthropogenic removals

Means of validation	The emission reduction sheet version 13/12/2010 of 1 st PoA period which is unchanged and valid for 2 nd PoA period as well, Clause 19 of applied methodology AMS-I.A., Ver. 17, fuel consumption of the technology and PoA-DD version 11 is checked by the assessment team.
Findings	No finding was raised during the validation process.
Conclusion	<p>Project emissions: The project being a solar home system will not have any project emissions in accordance with the applied methodology.</p> <p>Baseline emissions: It has been noted that the emission reduction for the higher capacity SHS units is based on the assumption that full output would be available from the solar panel. That is a 50 Wp SHS panel will supply 50 Watt power. Additional distribution losses have been considered along with 3.5 hours/day and 340 days of operation considering 25 days per year as down time due to maintenance. This is found to be justified. Emission reductions due to replacement of kerosene consumption per lamp is calculated as the product of number of kerosene lamps replaced, amount of kerosene consumption per lamp, net calorific value of kerosene and CO₂ emission factor of kerosene. This method complies with the option 3 of the applied methodology and has been found to be justified.</p>

Emission reductions from avoiding charging of batteries from local shop using diesel set has been calculated from the consumption of electricity for charging the batteries multiplied by CO2 emission factor. However, considering the very small potential for CO2 savings out of the replacement of diesel, these baseline emissions will not be included in the project's baseline emission which is conservative.

$$BE_{CO2y} = N_y \times \sum_j FC_{j,y} \times NCV_j \times EF_{CO2,j}$$

Where,

BE_{CO2y} = Baseline emissions in year y (t CO₂/yr)

N_y = Total number of kerosene lamps replaced in year y (nos.)

$FC_{j,y}$ = Amount of fuel consumption of fuel type j per lamp in year y (litres)

NCV_j = Net calorific value of fuel type j (TJ/Gg)

$EF_{CO2,j}$ = CO₂ emission factor of fuel type j (t CO₂/GJ)

Baseline emission for a number of SHS units that replace a single kerosene lamp is therefore calculated as:

$$BE_{CO2y} = \left(\frac{112.43}{1000} \right) \times N_y \text{ t CO}_2/\text{yr}$$

$$= 0.11243 \times \text{xxxx}$$

$$= \text{xxxxx tCO}_2/\text{yr}$$

Leakage:

In line with "General guidelines for SSC CDM methodologies", 23.0, EB104, Annex 5, Section N. Leakage due to transfer of equipment, it is stated in para 26 that:

"For Type I methodologies, the requirement that the replaced energy-generating equipment should be scrapped and that this scrapping should be independently monitored is not needed since under most circumstances the replaced equipment would most likely replace less efficient equipment outside the project boundary."

Hence, the retaining of old kerosene lamps need not be monitored and the leakage emissions are considered to be zero for this project activity.

Leakage is assumed to be zero as the kerosene lamps will be retained for use during emergency

Calculation of emission reductions

$$ER_y = (BE_y - PE_y) - LE_y$$

Where,

ER_y – Emission reductions in year y (t CO₂e)

BE_y – Baseline emissions in year y (t CO₂e)

PE_y – Project emissions in year y (t CO₂e)

LE_y – Leakage emissions in year y (t CO₂e)

D.2.4. Validity of monitoring plan

Means of validation	Assessment team checked the monitoring practice of generic CPA and also checked the requirement of AMS-I.A version 17 and procedure mentioned in the registered PoA-DD of 1 st Period.
Findings	No CAR is raised for the section
Conclusion	Following monitoring parameters are included in PoA-DD and the same is as per the requirement of approved methodology:

	<p>The following parameters have been determined ex-ante:</p> <ul style="list-style-type: none"> i) Emission factor for kerosene: This has been obtained from the 2006 IPCC guidelines as local values are not publicly available. ii) Annual consumption of kerosene per lamp: It has been noted from the "Assessment of carbon dioxide reduction potential and energy payback period of solar home systems in developing countries: Case of Bangladesh" by Md. Anisuzzaman that in Nepal, Sri Lanka and India that the average kerosene consumption per wick lamp is 0.04 to 0.06 litres per hour. For the PoA a value of 0.04 litre per hour has been applied conservatively. iii) Daily usage of technologies for the generation of lighting: A default value of 3.5 hours per day has been applied for this parameter as directed by the applied methodology. iv) Number of kerosene lamps replaced by a SHS: This has been obtained from the survey report on "Survey Methodology and Implementation Report: Kerosene consumption for solar home systems in Bangladesh: January, 2009" which is found justified. <p>Parameters Monitored Ex-Post The following parameters will be monitored:</p> <p>Number of SHS Installed: This will be obtained from the IDCOL database.</p> <p>Number of SHS that are operational (for each rating): It has been noted from solar home system inspection report that records on the condition of all SHS are maintained by the IDCOL. The same information is also maintained in the database which is confirmed during the telecon with CME. A sample will be drawn at 95% confidence level and at 10% precision per CPA from IDCOL data base to monitor and calculate number of operational SHS. The sampling plan will be as per the "General guidelines for sampling and surveys for cdm project activities and programme of activities, ver. 04, EB 86.</p> <p>The payment receipt of EMI to POs by individual SHS owner: This will be monitored from the EMIs receipt from the individual households.</p> <p>Confirmation of training or technical support provided: This will be monitored from the certificate on completion of training or receipt on support of technical support to recipient of training or technical support. It was confirmed during the telecon with the PP representative that training is provided to local personnel for the efficient functioning of the SHS units.</p> <p>Based on the above mentioned assessment Applus+ Certification considers that stated monitoring plan is feasible and the project proponent will be able to implement the monitoring plan into practice in order to satisfy the methodological requirements.</p>
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D.2.5. Eligibility criteria for inclusion of CPAs

Means of validation	The eligibility criteria has been developed to meet the references in Standard. Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities Version 03.0.			
Findings	No finding was raised during the validation process			
Conclusion	A CPA to be included in the present PoA fulfils the following conditions:			
	No .	Eligibility criterion – Category	Eligibility criterion – Required condition	Supporting evidence for inclusion
	1	The proposed CPA should have access to financing channels of the IDCOL Solar Energy Programme. (Each proposed CPA implementer, other than IDCOL itself, should be	The IDCOL Participation Agreement will be used to demonstrate that the CPA implementer is an approved participant of the IDCOL Solar Energy Programme. Articles III and IV of the	The proposed CPA will have access to financing channels of the IDCOL Solar Energy Program. It has been noted from the participation agreement for IDCOL Solar home systems programme

		an approved participant of the IDCOL Solar Energy programme).	Participation Agreement make it clear that Pos are eligible to receive IDCOL financing.	between IDCOL and participating organisation that the participating organisations have access to IDCOL financing
	2	The CPA should be confined to the self-generation of electricity, by the end user, from SHS technology.	The CPA DD should state that the CPA is confined to the self-generation of electricity by the end user from SHS technology.	The CPA shall be confined to the self-generation of electricity by the end user from SHS technology conforming with the technology described in the PoA-DD.
	3.	At the time of CPA inclusion, the installation of SHS is not required by law in Bangladesh.	Confirmation by third party that SHS use is not mandated by law in Bangladesh.	The proposed CPA is implemented at a time when there is limited institutional support for SHS in Bangladesh where limited institutional support is defined as no existing regulations that directly require SHS implementation: SHS requirement is not mandated by law in Bangladesh. In this context, DOE has checked validation report of 1 st PoA period wherein IDCOL has provided written confirmation that SHS is not required by law and that is still valid. Applus has also confirmed that there is no such requirement mandated by the environmental legislations of Bangladesh as checked from information available in public domain as well as during interaction with PP representative during telephonic interview.
	4.	The proposed CPA must be within the country of Bangladesh which is an LDC	Confirmation that the specific CPA and all households /SHS consumers planned to be included in it are located within the boundaries of Bangladesh.	The proposed CPA will be implemented within the country of Bangladesh which is a LDC. This can be verified through map of Bangladesh as mentioned in the POA-DD.
	5.	The proposed SHS customers in the specific CPA must be	IDCOL Participation Agreement. Section 1.01 (hh) of the	The SHS customers in the specific CPA must be

		households /communities / SMEs and located in rural areas and not have grid connected electricity at the time of SHS installation.	Participation Agreement defines the “Subproject Areas” as “ <i>Subproject areas means (1) geographical areas outside the grid electrification master plan of REB; (2) areas that do not qualify for grid electrification based on the revenue ratio criteria of REB; (3) remote households not qualified for grid electrification services by PBS; and (4) islands disconnected from the mainland; and isolated pocket areas, etc.</i> ”	households/communities/SMEs and be located in rural areas and do not have grid connected electricity at time of SHS installation. It has been noted from the participation agreement that the project activity will be implemented in subproject areas of Bangladesh which are clearly defined in the participant agreement as geographical areas outside the grid plan. It has also been confirmed from sample inspection report that there is clear mention whether the SHS is installed within the grid area or not. It has also been noted from the screenshot of database that there is a separate field titled “Discrepancy found” in the database. If the SHS is installed within the grid area, the same is noted under this field.
	6.	The start date of any specific CPA-DD shall be in accordance with EB 47 para 72 requirements and shall be no earlier than 22/06/2007.	Section D.1 of the document shall indicate a CPA start date of no earlier than 22/06/2007.	The start date of any CPA-DD shall be no earlier than the date of advertisement for global stakeholder consultations: 4 December 2007 (as an early start PoA, the start date of the 1 st CPA under the POA is fixed as 22 June 2007. This is in compliance with the CDM-EB 47 guidance and hence found justified.
	7.	The CPA is required to install SHS that meet the minimum standards as approved by the technical standards committee established by the Coordinating Entity. (Approved Solar Equipment)	Copy of the most recent minute from the SHS Committee indicating that it is actively setting standards for the whole SHS programme. IDCOL Participation Agreement requires Pos to purchase SHS from accredited suppliers.	The minimum quality PV panels as approved or defined by the co-coordinating entity shall be installed: The programme has established a technical standards committee which determines technical standards, reviews the credentials of dealers and approves eligible equipment for use in the programme

	8.	Each SSC-CPA and the SHS installed shall be uniquely identified and defined in an unambiguous manner by providing geographic information, and the year of installation covered.	<p>1. The CPA will describe its geographic location and duration for which applicable.</p> <p>2. Screenshot of IDCOL data base which confirms that IDCOL is maintaining a unique identification number for each SHS in the SHS programme corresponding to the name of beneficiary, date of installation, location and CPA.</p>	Each SSC-CPA and the systems installed shall be uniquely identified and defined in an unambiguous manner by providing geographic information, and the year of installation covered. Applus has verified the screenshots of the database which is submitted by the project participant. The same database was evidenced during site 1 st validation. The database clearly identifies owner of SHS along with unique identification number. Hence Applus considers that it is possible to verify performance of SHS and other related information during future verification	
	9.	Planned total installed capacity is within the limits of the small scale limits of 15MW installed capacity (as per Report Annex 20, EB 41, "Indicative Simplified baseline and monitoring methodologies for selected small scale CDM project activity categories") and each of the independent subsystems / measures in the project is planned to be ≤15MW.	Threshold check is not applicable in line with General guidelines for SSC CDM methodologies, version 23, dated 12/09/2019	DOE confirm that each CPA of this PoA will consist of only microscale CDM units, hence in line with para 4.17 of the "general guidelines for SSC CDM methodologies, version 23, 12/09/2019, CME is not required to demonstrate compliance with small scale threshold at the aggregate level of the CPA.	

	10.	Conditions to avoid double counting of GHG emission reductions or net anthropogenic GHG removals, such as unique identifications of product and end user locations	<ul style="list-style-type: none"> Prior to seeking an entry of a new SSC-CPA under the proposed PoA, IDCOL will check the UNFCCC and database to confirm that no stand-alone CDM project activity or CPA of another SHS PoA (if registered) has already been registered or entered under another SHS PoA. As it is proposed to uniquely identify each SHS installed under the Program, IDCOL will also check the database of already registered CPAs to check any inclusion of SHSs registered as part of any other CPA and exclude any such cases from the said CPA. It will also check to ensure that no SHS is included in 2 CPAs. Each installation entry in the data base will show under which CPA it falls. The DOE requested to enter new CPAs will also verify the above. 	Unique identifications and end user location checked with IDCOL database. Hence,DOE confirms that mechanism in place are adequate to avoid double counting.
	11.	Conditions to confirm that CPAs are neither	Prior to seeking an entry of a new SSC-	IDCOL and UNFCCC database checked and

		registered as CDM project activities, included in another registered PoAs, nor the project activities that have been deregistered	CPA under the proposed PoA, IDCOL will check the UNFCCC and database to confirm that no stand-alone CDM project activity or CPA of another SHS PoA (if registered) has already been registered or entered under another SHS PoA. The DOE requested to enter new CPAs will also verify the above.	found to be correct.
	12.	Sampling for the determination of parameter values for calculating GHG emission reductions or net anthropogenic GHG removals, conditions related to sampling requirements for the PoA in accordance with the "Standard: Sampling and surveys for CDM project activities and programme of activities"	Sampling of the program activity to be carried out as described in section B of PoA-DD	IDCOL Emission reduction calculation sheet checked and DOE confirm compliance with Standard: Sampling and surveys for CDM project activities and programme of activities
	13.	If the generic CPA is small-scale or microscale, conditions to ensure that CPAs that will be included meet the small-scale or microscale thresholds and remain within those thresholds throughout the crediting period of the CPAs. However, if the generic CPA consists solely of units that qualify as "microscale CDM units" as defined in the "Methodological tool: Demonstration of additionality of microscale project activities", these conditions are not required;	Threshold check is not applicable	Not applicable
	14.	If the generic CPA is small-scale or microscale, conditions for the debundling check based on the "Methodological tool: Assessment of debundling for small-scale project activities".	De-bundling check is not applicable	Not applicable

		However, if the generic CPA consists solely of units that qualify as “microscale CDM units”, these conditions are not required.			

SECTION E. Internal quality control

As final step of a validation of the final documentation including the 2nd renewable PoA period validation report and the checklist have to undergo an internal quality control by the technical review committee, i.e. each report has to be finally approved either by the head of the technical review committee or the deputy. In case one of these two persons is part of the assessment team approval can only be given by the other one to avoid any conflict of interest.

SECTION F. Validation opinion

Applus+ Certification has performed a validation for renewal of period of the “Installation of Solar Home Systems in Bangladesh”. The validation was performed on the basis of UNFCCC criteria and host country criteria, as well as criteria, e.g. AMS-I.A version 17, given to provide for consistent project operations, monitoring and reporting.

The review of the project design documentation and the subsequent follow-up interviews have provided Applus+ Certification with sufficient evidence to determine the fulfilment of stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria. The project will hence be recommended by Applus+ Certification for registration with the UNFCCC.

Applus+ Certification has received a confirmation from the host Party that the project activity assists it in achieving sustainable development.

The project correctly applies the small scale baseline and monitoring methodology AMS-I.A “Electricity generation by the user”, version 17. The project activity in its PoA consists of various CPAs involving installation of various capacity solar home systems for lighting and running of electrical appliances like TV etc. Electricity is generated through solar photovoltaic energy conversion technology and stored in storage cells. The program of activity is intended for reduction of CO₂ emissions by displacing kerosene lamps and diesel generators through implementation of similar CPAs. As a result, the project results in reductions of CO₂ emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project 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 activity. Adequate training and monitoring procedures have been described.

In summary, it is Applus+ Certification’s opinion that the PoA titled “Installation of Solar Home Systems in Bangladesh” as described in the PoA-DD of 29 June 2020, meets all relevant UNFCCC requirements for a PoA under the CDM and all relevant host Party criteria and correctly applies the baseline and monitoring methodology AMS-I.A, version 17.

The validation has been performed following the requirements of the latest version of the CDM validation and verification standard for programme of activities, version 02 and on the basis of the contractual agreement. The single purpose of this report is its use during the registration process as part of the CDM/UNFCCC project cycle.

Appendix 1. Abbreviations

Abbreviations	Full texts
CDCF	Community Development Carbon Fund
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction(s)
CME	Co-ordinating Managing entity
CL	Clarification request
CPA	CDM Programme Activity
CP	Crediting period
IBRD	International Bank for Reconstruction and Development
IDCOL	Infrastructure Development Company Limited
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EF	Emission Factor
ER	External Resource
EIA	Environmental Impact Assessment
ER	Emission Reductions
FAR	Forward Action Request
GHG	Greenhouse gas(es)
IR	Internal Resource
OR	Outside resource
GS	Grammen Shakti
NGO	Non Governmental Organization
PP	Project Participant
REB	Rural Electrification Board
REREDP	Rural Electrification and Renewable Energy Development Project
SHS	Solar Home System
ODA	Official Development Assistance
LDC	Least Developed Country
IPCC	Intergovernmental Panel on Climate Change
PV	Photo Voltaic

Appendix 2. Competence of team members and technical reviewers

1. **Mr. Pankaj Kumar** worked as team leader – Bihar for South Asia Climate Proofing and Growth Development(CPGD) – Climate Change Innovation Programme (CCIP) supported by DFID that seeks to mainstream climate change resilience into planning and budgeting at the national and sub-

national level in India, Pakistan, Nepal, and Afghanistan. Pankaj Kumar has worked previously with IL&FS Infrastructure Development Corporation and BUIDCO (Bihar Urban Infrastructure Development Corporation), Govt. Of Bihar as Environmental Specialist for WB & ADB funded projects. Prior to this, he worked with Carbon Check (UNFCCC accredited DoE), Johannesburg, RSA as Team Leader for validation, verification of around 100 GHG projects in Asia, Africa, USA, Asia Pacific & Americas. Pankaj is accredited Lead Auditor, Validator, Verifier and Technical Expert for Sectoral Scope/Technical Area – 1.1, 1.2, 3.1 & 13.1 by UNFCCC DoE (Designated Operational Entity), APPLUS, Spain. He is also member of task force on climate change & human health, Health Department, GoB and on roster of UNICEF's WASH experts.

He is an experienced, qualified and result oriented Environment Professional having more than 14 yrs. Of relevant experience in Climate Change (Mitigation & Adaptation), Environmental Due Diligence, Disaster Risk Reduction, Validation and Verification of GHG project under CDM, Verified Carbon Standard, Gold Standard & Social Carbon Standard, Brazil. He provides technical support for environmental investigative, consultative and remedial projects involving air, water and soil, Waste management, EIA, Environmental Compliance, ISO 14001, OHSAS 18001, GHG accounting (ISO 14064) and Carbon foot printing

Pankaj Kumar is Masters in Environment Management from Forest Research Institute (University), I.C.F.R.E, Dehradun, which is Centre of Excellence in South East Asia for Forestry education & research and PGDEL from National Law School of India University, Bangalore (India)..

2. **Mr. Simon Shen** (Master Degree in Thermal Energy Engineering, Bachelor Degree in Environmental Engineering) is a Lead Auditor appointed by Applus+ LGAI for the GHG project assessment. He is based in Shanghai. He has several years of work experience in environmental protection field. Before he joined Applus+ LGAI, he had been worked for TÜV SÜD as a GHG Validator/Assessment team and ISO 9001/14001 Lead Auditor for 3.5 years.

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	NA	Contract of the project participant with the DOE	Contract document signed between PP and DOE	Project participant
2	NA	CPA-1-13 for 1 st PoA DD	CPA-DDs of all 13 CPAs Please refer to CPA DD 1,2 & 3 https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/ZSI6WP0ODGRQ8UYKXB3MHTL957JVAE/viewCPAs?s=10 CPA DD 4-13 https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/ZSI6WP0ODGRQ8UYKXB3MHTL957JVAE/viewCPAs?s=0	Project participant
3	NA	1st PoA-DD version 10 PoA-DD based on which opinion is provided- Version 11	12/02/2014 29/06/2020	Project participant

4	NA	Statistics year book, 2018	Govt. of Bangladesh	
5	NA	AMS-I.A version 17	UNFCCC CDM web site	UNFCCC
6	NA	Modalities of Communication	15/03/2019	UNFCCC
7	NA	<p>Tools/ guidelines used in the project activity:</p> <ul style="list-style-type: none"> Guidance for determining the occurrence of debundling under a PoA, EB 47, Annex 32 Guidelines on assessment of debundling for SSC project activities, ver, 04, EB 83, Annex 13 Standard for sampling and surveys for CDM project activities and programme of activities, ver. 8.0, EB 105 Guidelines for sampling and surveys for CDM project activities and programme of activities, ver.4.0 , EB 86 Assessment of the validity of the original / current baseline and update of the baseline at the renewal of the crediting period." (Version 03.0.1). The general guidelines for SSC CDM methodologies, ver. 23 dated 12/09/2019 Tool for demonstration of additionality of micro scale project activities, ver. 09 dated 29/11/2018 	UNFCCC CDM web site	UNFCCC
8	NA	Unique GPS coordinates	<p>CPA-DDs of all 13 CPAs Please refer to CPA DD 1,2 & 3 https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/Z/SI6WP0ODGRQ8UYKXB3/MHTL957JVAE/viewCPAs?s=10</p> <p>CPA DD 4-13 https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/Z/SI6WP0ODGRQ8UYKXB3/MHTL957JVAE/viewCPAs?s=0</p>	UNFCCC
9	NA	Technical specifications for solar home systems (SHS)	07/10/2002 REREDP	
10	NA	ER sheet	13/12/2010	IDCOL
11	NA	Survey report		Grameen

				Shakti
12	NA	Assessment of carbon dioxide reduction potential and energy payback period of solar home systems in developing countries: Case of Bangladesh” by Md. Anisuzzaman that in Nepal, Sri Lanka and India		
13	NA	Survey Methodology and Implementation Report: Kerosene consumption for solar home systems in Bangladesh	January, 2009	
14	NA	SHS Inspection report		
15	NA	SHS database		IDCOL

Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 1. CL from this validation

CL ID	xx	Section no.		Date: DD/MM/YYYY
Description of CL				
Project participant response				Date: DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				Date: DD/MM/YYYY

Table 2. CAR from this validation

CAR ID	01	Section no.	A.1	Date: 24/06/2020
Description of CAR				
<ol style="list-style-type: none"> In Sec. A.1, it is stated that beyond 2012, the target of SHS may be further revised but no new target mentioned for 2nd crediting period. It is stated for footnote 5 (Grameen Shakti) that not available always? PP shall clarify if web link is not always available then what is the rationale for providing the link in PoA-DD 				
Project participant response				Date: 29/06/2020
<ol style="list-style-type: none"> Up to December 2015, a total of 18,19,928 SHS have been installed in 13 CPAs under the program and SHS nos. will further increase depending on performance of the program but unable to confirm any target numbers for 2nd crediting period. Sec. A.1 statement has now been removed to avoid any confusion on the status. Footnote 5 weblink has been removed as same is not required. 				
Documentation provided by project participant				
PoA-DD, Ver. 11				
DOE assessment				Date: 30/06/2020
<ol style="list-style-type: none"> CME has clarified that as there is uncertainty of targeted SHS for 2nd period at this stage, statement reframed in sec. A.1 of revised PoA-DD, ver. 11 dated 29/06/2020. CME has removed footnote 5 from revised PoA-DD, Ver. 11 dated 29/06/2020. 				
CAR Closed.				

CAR ID	02	Section no.	B	Date: 24/06/2020
Description of CAR				
<ol style="list-style-type: none"> CME shall provide sample sale agreement CME is requested to provide an undertaking regarding no double counting of emission reduction in any other GHG mechanism. 				
Project participant response				Date: 29/06/2020

1. Sample sale agreements are attached for reference.
2. There is no additional undertaking required as IDCOL has already ensured no double counting will be done in the program as per process given in Section B of PoA-DD. Further, this condition is now part of CPA inclusion criteria of Section K also.
Documentation provided by project participant
DOE assessment
Date: 30/06/2020
<ol style="list-style-type: none"> 1. CME has provided sample sale agreements which confirms that CME will have ownership of carbon credit generated from the PoA. 2. CME has clarified that an undertaking regarding no double counting in the programme already provided during the validation of 1st crediting period and there is no change in status quo, hence, validation conclude that at this stage of renewal of crediting period of PoA, no such undertaking needed and can be checked at CPA inclusion stage only.
CAR Closed

CAR ID	03	Section no.	PoA DD	Date: 24/06/2020
Description of CAR				
<ol style="list-style-type: none"> 1. Web links provided in footnote 20,23,25,29,31,32,33,51,52 and 53 not working. PP shall provide functional weblinks and remove weblinks which are no more working. 2. Through out the PoA-DD, at no. of places words are jumbled. Corrective action required. 3. CME shall remove internal comments from PoA-DD 				
Project participant response				Date: 29/06/2020
<ol style="list-style-type: none"> 1. All non working links have been removed from the PoA-DD as same is not required. 2. All words are now in order. 3. All internal comments have been removed 				
Documentation provided by project participant				
DOE assessment				Date: 30/06/2020
<ol style="list-style-type: none"> 1. CME has removed all non functional and irrelevant web links from revised PoA-DD, Ver. 11 dated 29/06/2020. 2. CME has rectified formatting error and jumbled words in revised PoA-DD 3. CME has removed all internal comments from revised PoA-DD, Ver. 11 dated 29/06/2020. 				
CAR Closed				

CAR ID	04	Section no.	C	Date: 24/06/2020
Description of CAR				
<ol style="list-style-type: none"> 1. In sec. C, for demonstration of additionality, under "barrier & SHS penetration rate and lack of awareness of SHS" it is stated that Govt. will achieve target to electrify the entire country by 2020. CME is requested to provide supporting evidences for current penetration rate and also confirm the status of electrification programme to ascertain whether this barrier is still relevant. 2. CME shall also provide robust supporting evidences to demonstrate if institutional and regulatory barrier still exists. 				
Project participant response				Date: 29/06/2020
<ol style="list-style-type: none"> 1. The additionality is at PoA level and same has been demonstrated during registration of the project activity so reassessment of additionality is not required during renewal of the project activity as per program standard of CDM. 2. The program to provide electricity to users in off-grid, remote and rural areas with SHS. These SHS users currently have no access to grid connected electricity and currently use kerosene for lighting. According to the statistical year book of Bangladesh year book 2018, table 6.14, in total rural population, currently kerosene is the source of lighting for 12% off grid population and alternative source of the 9% solar home system (SHS)³ which is likely to continue in the absence of the program. It has been confirmed from REB weblink (http://www.reb.gov.bd/site/page/b36a45d6-6ed2-4477-9cb1-831bd0b13d90/-0) which confirms kerosene is being used by households in absence of electricity. 				
Documentation provided by project participant				

DOE assessment	Date: 30/06/2020
<ol style="list-style-type: none"> 1. Explanation provided by CME that assessment of additionality need not to be assessed at the time of renewal of PoA period, was found to be ok. However, DoE sought to know the status due to likely change in baseline scenario and checked Statistics year book of Bangladesh, 2018 and found the barrier still relevant. 2. As programme is meant for households not connected to grid and use kerosene for lighting . Justification provided by CME regarding relevance of institutional and regulatory barrier cross checked with Statistics year book, 2018 which confirms that still 12% of population not connected to grid use kerosene oil for lighting purpose and likely to continue in the absence of this programme. DOE further checked REB website which also confirms that kerosene is widely used by households in absence of electricity 	
CAR Closed	

CAR ID	05	Section no.	I.2	Date: 24/06/2020
Description of CAR				
CME shall demonstrate explicitly demonstrate compliance of methodology criteria “ 3 (c) “ which states that grid connected household coverage is less than 50 % in project boundary				
Project participant response				Date: 29/06/2020
The program is to provide electricity to users in off-grid, remote and rural areas with SHS so this methodology condition will not be applicable in the project activity. Further, justification for the applicability condition has been added to the PoA-DD.				
Documentation provided by project participant				
DOE assessment				Date: 30/06/2020
Explanation provided by CME that programme is intended for households which are not connected to grid only in remote rural areas, methodology criteria “3 (c) “ not applicable”.				
CAR Closed				

CAR ID	06	Section no.	I.5	Date: 24/06/2020
Description of CAR				
Justification provided in section I.5 of the PoA-DD is not sufficient and conclusive for compliance with EB 66 Annex 47 i.e. continuity with original baseline guidance. PP has referred Statistics Year Book 2018 and citation not provided in PoA-DD. CME requested to provide provide robust evidences/ supporting document to demonstrate that there is no change in baseline.				
Project participant response				Date: 29/06/2020
The program is to provide electricity to users in off-grid, remote and rural areas with SHS. These SHS users currently have no access to grid connected electricity and currently use kerosene for lighting. The baseline parameters fixed ex-ante are: Emission factor for kerosene based on IPCC 2006 guidelines; Annual consumption of Kerosene per lamp based on hourly kerosene consumption per lamp, daily usage and number of operational days per year; Daily usage of technologies for the generation of lighting fixed based on default value suggested in the methodology; Annual operating days of SHS units replacing the kerosene lamps conservatively taken as 340 days/year; density of kerosene; Net calorific value of kerosene; and Number of kerosene lamps replaced by a SHS. None of the above parameters are to be changed at the time of renewal.				
Documentation provided by project participant				
<i>PoA-DD, Ver. 11, 29/06/2020</i>				
DOE assessment				Date: 30/06/2020
PP has made necessary amendments in sec. I.5 of revised PoA-DD, Ver. 11 dated 29/06/2020 to demonstrate continuation original baseline scenario which was checked with Statistical Year book of Bangladesh, 2018 and found to be appropriate and in compliance with EB 66, Annex. 47.				
CAR closed.				

CAR ID	07	Section no.	I.7.2	Date: 24/06/2020
Description of CAR				
Under sampling plan, sub grouping of SHS is upto 2014. PP shall confirm whether this is ok or CME intends to plan beyond 2020.				
Project participant response				Date: 29/06/2020
There is no change in sampling plan in programme and shall continue the same approach considered during registration time of the PoA-DD.				
Documentation provided by project participant				

DOE assessment				Date: 30/06/2020
CME confirmed that there will be no change in approach for sampling plan in programme during renewal of crediting period of the programme which appears to be ok. CAR closed				
CAR ID	08	Section no.	PoA-DD	Date: 24/06/2020
Description of CAR				
<ol style="list-style-type: none"> 1. CME to provide copy of Survey report conducted by Grameen Shakti 2. Multiple financial institutions like KfW, GTZ, ADB, WB provided financials support to the programme. CME shall clarify whether these financial institutions have any share in carbon credits accrued from this PoA? 				
Project participant response				Date: 29/06/2020
<ol style="list-style-type: none"> 1. Sample survey reports are attached for your reference. 2. None of financial institution have any share in carbon credits accrued from this PoA. 				
Documentation provided by project participant				
DOE assessment				Date: 30/06/2020
<ol style="list-style-type: none"> 1. CME has provided copy of survey report conducted by Grameen Shakti 2. Explanation provided by CME that no financial institution have any share in carbon credits confirmed with MoC available on UNFCCC interface and CME also confirmed that there will be no change in status of ODA funding requirement since registration for 1st crediting period. CAR closed. 				

Table 3. FAR from this validation

FAR ID	xx	Section no.		Date: DD/MM/YYYY
Description of FAR				
Project participant response				Date: DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				Date: DD/MM/YYYY

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
02.0	31 May 2019	Revision to: <ul style="list-style-type: none">• Ensure consistency with version 02.0 of the “CDM validation and verification standard for programmes of activities” (CDM-EB93-A08-STAN) and version 02.0 of the “CDM project cycle procedure for programmes of activities” (CDM-EB93-A09-PROC);• Make editorial improvements.
01.0	29 December 2017	Initial publication.

Decision Class: Regulatory
Document Type: Form
Business Function: Renewal of crediting period
Keywords: crediting period, programme of activities, validation report