




**Validation report form for
CDM programme of activities
(Version 03.0)**

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

BASIC INFORMATION

Title of the programme of activities (PoA)	SHINE – Distribution of LED Lightbulbs in India
Version number of the validation report	05
Completion date of the validation report	24/07/2019
Version number of PoA-DD to which this validation report applies	Version 07, dated 24/07/2019
Date when PoA-DD was uploaded for global stakeholder consultation	24/04/2018
Coordinating/managing entity (CME)	Brightspark Energy Private Limited
Host Parties	India
Applied methodologies and standardized baselines	AMS-II.C- Demand-side energy efficiency activities for specific technologies, Version 15.0
Mandatory sectoral scopes	Sectoral Scope 3: Energy demand
Conditional sectoral scopes, if applicable	Not applicable
Name and UNFCCC reference number of the DOE	Carbon Check (India) Private Ltd. (E-0052)
Name, position and signature of the approver of the validation report	Amit Anand, CEO 

SECTION A.Executive summary

>>

Purpose and general description

Brightspark Energy Private Limited (The CME) and C Quest Capital Malaysia¹ has appointed /08/ the DOE, Carbon Check (India) Private Ltd. to perform an independent validation of the PoA “SHINE – Distribution of LED Lightbulbs in India” in India (hereafter referred to as “PoA”). This report summarises the findings of validation of the project, performed on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. The term “UNFCCC criteria” refers to Article 12 of the Kyoto Protocol, the CDM modalities and procedures or the simplified modalities and procedures for small-scale CDM project activities (as applicable) and the subsequent decisions by the CDM Executive Board. This report contains the findings and resolutions from the validation and a validation opinion.

The proposed PoA aims to reduce fossil-fuel based electricity consumption in the lighting usage of India’s residential and commercial sector by introducing more energy efficient LED lamps/tubes to replace incandescent lightbulbs (“ICLs”) and fluorescent lamps (FLs), thereby contributing to the reduction of greenhouse gas emissions and applies methodology; AMS II.C, Version 15.0.

The PoA will reduce amount of carbon dioxide emissions in the atmosphere that was occurring prior to the usage of LEDs. The PoA 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 PoA is not a likely baseline scenario. Emission reductions attributable to the PoA are hence additional to any that would occur in the absence of the PoA in accordance with the UNFCCC CDM requirements for additionality.

The purpose of validation is to have a thorough and independent assessment of the proposed PoA against the applicable CDM requirements, in particular, the project's baseline, monitoring plan and the PoA’s compliance with relevant UNFCCC and host Party criteria. These are validated to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Validation requirement for all CDM projects and programme of activities is necessary to provide assurance to stakeholders of the quality of the PoA and its intended generation of certified emission reductions (CERs).

Location

The PoA will be implemented within the geographical boundary of India.

Scope of the validation

The validation scope is defined as the independent and objective review of the programme of activities design document (PoA-DD /2/). The PoA-DD /2/ is reviewed against the relevant criteria (see above) and decisions by the CDM Executive Board, including the approved baseline and monitoring methodologies. The validation team has, based on the recommendations in the CDM Validation and Verification Standard for PoAs, Version 02.0 /B01-a/ employed a rule-based approach, focusing on the identification of significant risks for project implementation and the generation of CERs.

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

¹ C-Quest Capital Malaysia Limited and Ecoeye Co., Ltd, were listed as project participants in the PoA-DD hosted for GSC and were later withdrawn from the PoA-DD by the CME.

While carrying out the validation, CCIPL determines if the PoA complies with the requirements of the paragraph 37 of the CDM Modalities & Procedures, the applicability conditions of the selected methodology /B02/, guidance issued by the Board and also assess the claims and assumptions made in the PoA-DD /2/ without limitation on the information provided by the project participants.

Validation Process

The validation consists of the following four phases:

- i. A desk review of the programme design documents
 - A review of the data and information;
 - Cross checks between information provided in the PoA-DD /1/ /2/ and information from sources with all necessary means without limitations to the information provided by the project proponent;
- ii. Follow-up interviews with project stakeholders
 - Interviews with relevant stakeholders in host country with personnel having knowledge of the project development via telephone, email, etc.;
 - 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 relating to projects or technologies similar projects under validation and review based on the approved methodologies /B02/ being applied for 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 PoA-DD /1/ undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to document reviews and stakeholder interviews, review of the applicable/applied methodologies /B02/ and their underlying formulae and calculations.

This report contains the findings and resolutions from the validation and a validation opinion on the proposed PoA thus confirming the programme design in the documents is sound and reasonable and meets the stated requirements and identified criteria.

Conclusion

The selected baseline and monitoring methodology (AMS-II.C- Demand-side energy efficiency activities for specific technologies, Version 15.0 /B02/) is applicable to the project and correctly applied. Carbon Check (India) Private Ltd. therefore recommends the project to the CDM Executive Board for registration.

Carbon Check (India) Private Ltd. concludes the validation with a positive opinion that the CDM PoA "SHINE – Distribution of LED Lightbulbs in India" in India, as described in the PoA-DD /02/, meets all applicable CDM requirements, including those specified in the CDM Project Standard for PoAs /B01-b/, relevant methodologies, tools and guidelines and article 12 of the Kyoto Protocol, paragraph 37 of CDM modalities and procedures, subsequent decisions by the COP/MOP and CDM Executive Board.

SECTION B. Validation team, technical reviewer and approver

B.1. Validation team members

No.	Role	ଓଡ଼ିଆ Last name	First name	Affiliation	Involvement in
-----	------	-----------------	------------	-------------	----------------

CDM-PoA-VAL-FORM

					(e.g. name of central or other office of DOE or outsourced entity)	Desk review	On-site inspection	Interview(s)	Validation findings
1.	Team Leader / Technical Expert / Local Expert	IR	Singh	Vikash Kumar	CC IPL	X	X	X	X

B.2. Technical reviewer and approver of the validation report

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	IR	Agarwalla	Sanjay Kumar	CC IPL
2.	Approver	IR	Anand	Amit	CC IPL

SECTION C. Means of validation**C.1. Desk/document 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: 25/06/2018 to 26/06/2018				
No.	Activity performed on-site	Site location	Date	Team member
1.	Approval of project activity from Host Party and approval of participation of Project Participant(s).	Hyderabad, India.	25/06/2018 to 26/06/2018	Vikash Kumar Singh
2.	<ul style="list-style-type: none"> • Eligibility Criteria for Inclusion of a CPA in the PoA • Competence of CME to evaluate the inclusion of a CPA • Technology/measure employed in specific CPA; 	Hyderabad, India.	25/06/2018 to 26/06/2018	Vikash Kumar Singh
3.	<ul style="list-style-type: none"> • Emission reductions calculations. • Monitoring plan • Baseline identification and Additionality demonstration of the CPA 	Hyderabad, India.	25/06/2018 to 26/06/2018	Vikash Kumar Singh
4.	<ul style="list-style-type: none"> • Implementation, Operation and Management of specific CPA; • Training of personnel • Local laws and regulations in host country applicable to the project activity. 	Hyderabad, India.	25/06/2018 to 26/06/2018	Vikash Kumar Singh

C.3.Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Goswami	Tridip	Brightspark Energy Private Limited	25/06/2018 to 26/06/2018	<ul style="list-style-type: none"> • Project Design • Proposed Technology to be used • Environmental Management Plan/ EIA • Local stakeholders meeting process • Management structure with Roles and Responsibilities • Monitoring Plan and process to be adopted • Socio-economic Impacts of the project activity • Sustainability aspects of the project • Baseline Scenarios and alternatives • Emission Reduction 	Vikash Kumar Singh

2.	Verma	Pooja	Brightspark Energy Private Limited	25/06/2018 to 26/06/2018	<ul style="list-style-type: none"> •Project Design •Management structure with Roles and Responsibilities •Sustainability aspects of the project •Proposed Technology to be used 	Vikash Kumar Singh
3.	Telkar	Hemant Kumar	Brightspark Energy Private Limited	25/06/2018 to 26/06/2018	<ul style="list-style-type: none"> •Management structure with Roles and Responsibilities 	Vikash Kumar Singh
4.	Roy	Darisy Ranganadh	Telangana State Southern Power Distribution Co. Ltd. (TSSPDCL)	25/06/2018	<ul style="list-style-type: none"> •Baseline Scenarios 	Vikash Kumar Singh
5.	Rehman	Abdul	Telangana State Southern Power Distribution Co. Ltd. (TSSPDCL)	25/06/2018	<ul style="list-style-type: none"> •Baseline Scenarios 	Vikash Kumar Singh
6.	Katta	Madhawi	Telangana State Southern Power Distribution Co. Ltd. (TSSPDCL)	25/06/2018	<ul style="list-style-type: none"> •Baseline Scenarios 	Vikash Kumar Singh
7.	Reddy	Prashanth	Mainavi Global Solutions	25/06/2018	<ul style="list-style-type: none"> • Discussion on the mobile application developed for the project implementation/record keeping 	Vikash Kumar Singh
8.	Reddy	Srikanth	Nirmala Enterprises	25/06/2018	<ul style="list-style-type: none"> • Institutional capacity for the effective distribution/record keeping/storage of ICLs etc. 	Vikash Kumar Singh

C.4.Sampling approach

>>

Not Applicable

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

Areas of validation of compliance	No. of CL	No. of CAR	No. of FAR
Programme of activities	--	--	--
Identification of programme type	--	01	--
Description of PoA	--	--	--

Management system	--	--	--
Demonstration of additionality of PoA	01	01	--
Start date and duration of PoA	--	01	--
Environmental impacts	--	--	--
Socio-economic impacts	--	--	--
Local stakeholder consultation	--	--	--
Sustainable development co-benefits	--	--	--
Approval	--	01	--
Authorization	--	Same as above	--
Modalities of communication	01	--	--
Global stakeholder consultation	--	--	--
Generic component project activities	--	--	--
General description of generic CPA	--	01	--
Selection of methodologies and standardized baselines	--	--	--
•Deviation from methodologies and/or methodological tools	--	--	--
•Clarification on applicability of methodology, tool and/or standardized baseline	--	--	--
Application of methodologies and standardized baselines	--	01	--
•General	--	--	--
•Project boundary, sources and GHGs	--	--	--
•Baseline scenario	--	--	--
•Estimation of emission reductions or net anthropogenic removals	--	--	--
•Monitoring plan	--	03	--
Crediting period type and duration	--		--
Eligibility criteria for inclusion of CPAs	--	03	--
Others (please specify)	--	03	--
Total	02	15	00

SECTION D.Validation findings

D.1.Programme of activities

D.1.1.Identification of programme type

Means of validation	DR, I
Findings	CAR-01 has been raised and satisfactorily closed.
Conclusion	CC IPL based on review of PoA-DD and on-site inspection confirms that the proposed CDM PoA will include only non-A/R CPAs. The assessment in compliance with § 37 CDM VVS for PoAs (version 02.0) /B01-a/.

D.1.2.Description of PoA

Means of validation	DR, I
Findings	--
Conclusion	<p>The description of the project activity contained in the PoA-DD /2/ is transparent, detailed and provides a clear overview of the project. Its content was confirmed by means of document review //02/ and interviews to validate the accuracy and completeness of the project description.</p> <p>The purpose of this Program of Activities- “SHINE – Distribution of LED Lightbulbs in India” (henceforth referred as PoA) is to reduce fossil-fuel based electricity consumption in the lighting usage of India’s residential and commercial sector by</p>

introducing more energy efficient LED lamps/tubes to replace incandescent lightbulbs ("ICLs") and fluorescent lamps (FLs), thereby contributing to the reduction of greenhouse gas emissions.

As per the PoA DD /02/, the project activities implemented under this PoA will target grid connected households as well as small & medium enterprises, and small commercial establishments that have not been able to tap the advantages of LED bulbs/tubes to date owing to the high upfront cost as well as lack of awareness.

Brightspark Energy Private Limited (henceforth abbreviated as BEPL) is the Coordinating Managing Entity (CME) of this SSC-PoA. Much of the implementation work will be done by entity designated by BEPL in collaboration with either state Electricity Distribution Companies (DISCOMs) or public or private entities., though the PoA will be open for other implementers.

ECOYE Co., Ltd. (henceforth referred as Ecoeye); Korea Impact Carbon Corporation (KICC) and/or Korean Party(ies) will provide all implementation cost for the project under this PoA. Ecoeye and/or Korean Party(ies) shall provide subsidy to make LEDs affordable to households, as well as will undertake operation & maintenance costs of LED production and distribution for CME and CPA implementers to operate the CPA in a financially sustainable condition.

The end user will be informed about carbon finance that the project will generate as well as the fact that this finance will be used in reducing the cost of the LED lamps to affordable rates. Against this, the customer will confirm during registration process his/her agreement to transfer their right to the carbon credits or certified emission reductions (CERs) generated by the CPA under the proposed PoA, to the CME and/or CPA Implementer. The registration data shall also include among other things, customer's information such as address, unique id (e.g. unique service number allocated by the DISCOM, PAN or AADHAR number etc), e .g. number of LEDs provided by the implementer etc. This Information will form an important component of the project database and shall be recorded by CME in hard copy and/or in electronic format.

Validation team based on review of PoA-DD /02/ and on-site inspection interview confirms that:

1. The PoA-DD provides the framework developed for the implementation of the proposed CDM PoA;
2. The PoA-DD provides the policy/measure or stated goal that the PoA seeks to promote;
3. The PoA is a voluntary action by the CME as confirmed by the validation team upon review of the PoA-DD /02/

This is in conformance with §38 of CDM VVS for PoAs (version 02.0) /B01-a/

The PoA-DD /02/ describes how the PoA contributes to the sustainable development in the host country of India. The validation team reviewed the LoA /3/ issued by host party DNA dated 15/04/2019 and confirms that the PoA contributes to sustainable development in the host country of India.

In accordance with § 39 of CDM VVS for PoAs (version 02.0) /B01-a/ the validation team has assessed the geographical boundary of the PoA within which all CPAs included in the PoA will be implemented and confirms that geographical boundary of the PoA is within India. This was as checked and confirmed by reviewing the PoA-DD /2/ and interviews with representatives of CME. Review of PoA-DD reveals the definition of the boundary for the PoA in terms of a geographical area i.e. within India (within which all CPAs included in the PoA will be implemented) has been transparently defined, and in establishing the boundary of the PoA, the CME has taken into consideration all applicable national and/or sectoral policies and regulations within that chosen boundary. This conforms to the requirement of §40 of CDM VVS for PoAs (version 02.0) /B01-a/.

	<p>CC IPL based on review of PoA-DD /02/ confirms that a generic CPA part of the PoA-DD (hereinafter referred to as generic CPA-DD) has been prepared for the one technology/measure, methodology in one generic CPA-DD in accordance with the relevant requirements in the “CDM project standard for programmes of activities” (Version 02.0) /B01-b/. This conforms to the requirement of §41 of CDM VVS for PoAs (version 02.0) /B01-a/.</p> <p>From the desk review of PoA-DD /2/ and interviews of the CME representatives, it is revealed that this programme does not involve any ODA funding. Thus, the validation team considers no ODA funding from any Annex 1 country has been involved under this programme. This is further confirmed by the undertaking /05/ provided by the CME.</p> <p>The length of the PoA is taken as 28 years. The starting date of the validation of the PoA is 24/04/2018 i.e., the date the PoA-DD /1/ was published for GSC. In the PoA-DD /2/ it has been confirmed that no CPA shall be applicable for the inclusion in the PoA if the start date is before the start of PoA. This is in conformance with the requirements contained in § 47, § 48, § 49 and § 50 CDM VVS for PoAs (version 02.0) /B01-a/.</p> <p>Based on assessment above, CC IPL confirms that the description of the proposed CDM PoA in the PoA-DD is accurate and complete and it provides an understanding of the PoA. This conforms to the requirement of §42 of CDM VVS for PoAs (version 02.0) /B01-a/.</p>
--	--

D.1.3. Management system

Means of validation	DR, I
Findings	--
Conclusion	<p>Validation team reviewed the PoA-DD /01/, CME management system manual /07/ and confirms that clear and transparent information about responsibilities, records handling, training, technical review procedures, record keeping, documentation control and measures for continual improvements. The same has been confirmed during the interviews with representatives of CME and document review /01/, /07/. The validation team concludes that the operational and management plan described in the PoA-DD /2/ is complete. This is deemed appropriate by the validation team. Brightspark Energy Private Limited (BEPL) will be Coordinating/Managing Entity (CME) of this SSC-PoA and is the entity which communicates with the CDM Executive Board. In general, Ecoeye Co., Ltd. will be responsible for financing the implementation of the CPAs under this PoA, although the PoA will be open for other investors. BEPL is currently the only project participants to the SSC-PoA.</p> <p>Validation team confirms the compliance of the requirements of §36 and §37 of the CDM PS for PoAs (version 02.0) /B01-b/ and §44 of the CDM VVS for PoAs (version 02.0) /B01-a/.</p>

D.1.4. Demonstration of additionality of PoA

Means of validation	DR, I
Findings	CL-01 and CAR-15 has been raised and satisfactorily closed.
Conclusion	<p>The proposed PoA, “SHINE – Distribution of LED Lightbulbs in India” is a voluntary activity initiated by the CME. The initiative is solely based on expected CER revenue and is being run on financial assistance. There are no mandatory policies and/or regulations in India that mandates the installation of LED lighting equipment in households. Furthermore, end-users and other stakeholders participating in SSC-CPAs under the PoA will do so through a voluntary collaboration with the CME.</p> <p>Based on I & R comment received from UNFCCC, CME has removed reference of Paragraph 15 of AMS-II.C ver. 15 to demonstrate additionality.</p>

	<p>The generic CPA of the PoA is small-scale in accordance with the thresholds referred to in paragraph 126 of PS for PoAs (version 02.0) and applies only small-scale methodology. The section C and K of the PoA DD provides description to demonstrate additionality based on financial barrier, which include conditions that would systematically demonstrate additionality of CPAs under the proposed CDM PoA in the eligibility criteria for inclusion of CPAs in the PoA. In the opinion of validation team, based on revised POA DD and Template Investment Analysis Spread sheet, the description/generic information provided in the PoA DD is sufficient to demonstrate additionality of the potential CPAs of the PoA DD. The criteria is inline with the requirements of tool 21-“Demonstration of additionality of small -scale project activities; Version 12.0 read with ‘ Tool for the demonstration and assessment of additionality’; version 07.0.</p> <p>This is in conformance with the requirements of §38, §39 and §124 (g) of the CDM PS for PoAs (version 02.0) /B01-b/ and §45 of CDM VVS for PoAs (version 02.0) /B01-a/.</p>
--	---

D.1.5.Start date and duration of PoA

Means of validation	DR,I
Findings	CAR-02 has been raised and satisfactorily closed.
Conclusion	<p>The validation team reviewed the PoA-DD /01/ and found that the duration of the PoA is 28 years, counting from the start date of the PoA. Based on the above assessment, the validation team concludes that the duration of the proposed PoA is in conformance with the requirements of §43 of CDM PS for PoAs (version 02.0) /B01-b/ and § 49 of CDM VVS for PoAs (version 02.0) /B01-a/.</p> <p>The start date of the PoA is 24/04/2018, which is the date of publication of PoA-DD for Global Stakeholders Consultation.</p> <p>Based on the above assessment, the validation team concludes that the description and determination of the start date of the proposed PoA is in conformance with the requirements of the Glossary of CDM Terms /B05/, § 40, § 41 of CDM PS for PoAs (version 02.0) /B01-b/ and § 46, § 48 and § 49 of CDM VVS for PoAs (version 02.0) /B01-a/.</p>

D.1.6.Environmental impacts

Means of validation	DR,I
Findings	--
Conclusion	<p>It has been indicated in the section E.1 of PoA-DD /2/ that the environmental analysis is done at PoA level.</p> <p>This PoA involves the distribution and installation of LED lighting equipment. As per the Ministry of Environment and Forests (Government of India) notification dated September 14, 2006, the implementation of the project does not require an Environmental Impact Assessment (EIA). Hence, environmental impact analysis is not required for the PoA and also for the CPA.</p> <p>This is deemed appropriate in the context of the PoA and also in conformance to the requirements of § 44, § 45 and § 46 of CDM PS for PoAs (version 02.0) /B01-b/ and § 51 to § 55 of CDM VVS for PoAs (version 02.0) /B01-a/.</p>

D.1.7.Socio-economic impacts

Means of validation	N/A since the PoA is not a A/R project.
Findings	--
Conclusion	--

D.1.8.Local stakeholder consultation

Means of validation	DR,I
----------------------------	------

Findings	--
Conclusion	<p>It has been indicated in the PoA-DD /01/ that the local stakeholder consultation has been done at PoA level, validation team deemed it appropriate by reviewing the list of invitees /09/ (which includes several DISCOMs of India as well nodal agencies working in the field of renewable energy & energy efficiency in India and also the national /local level NGOs and environmental/social/economic/energy experts) and the media /09/ (e-mails, public advertisements- newspaper advertisement in national as well local newspaper in vernacular language) used for inviting the comments. A meeting /09/ was also conducted on 07/03/2018, which is before the GSC of the PoA. The summary of the comments /09/ received during the meeting is complete and CME has taken appropriate steps to address each query/concern and gathered feedback. No comments were received from other media such as email.</p> <p>This is deemed appropriate in the context of the the PoA and is in accordance with the requirement of § 51 to § 67 of CDM PS for PoAs (version 02.0) /B01-b/ and § 58 to § 65 of CDM VVS for PoAs (version 02.0) /B01-a/.</p>

D.1.9.Sustainable development co-benefits

Means of validation	Not applicable
Findings	Not applicable
Conclusion	Not applicable

D.1.10.Approval

Means of validation	DR,I
Findings	CAR-03 has been raised and satisfactorily closed.
Conclusion	<p>In accordance with § 69 of CDM PS for PoAs (version 02.0) /B01-b/, the coordinating/managing entity has obtained a Letter of Approval /3/ dated 15/04/2019 from the DNA Party involved in the proposed CDM PoA at the time of request for registration of the PoA.</p> <p>The coordinating/ managing entity has obtained from host Party a Letter of Authorization of its coordination of the proposed CDM PoA; this confirms to the requirement of §69-§71 of CDM PS for PoAs (version 02.0) /B01-b/. The project participant is Brighspark Energy Private Limited; the project is a unilateral project and hence India is the only country involved in the proposed Programme of Activities.</p> <p>India is the Host party and fulfils the requirements to participate in the CDM, having ratified the Kyoto Protocol in August 2002 and establishing a DNA in the “Ministry of Environment,Forest and Climate Change” as per the UNFCCC website /B13/.</p> <p>The Validation Team can confirm that the issued LoA /3/ from host party refers to the precise proposed PoA title as in the PoA-DD /2/. The Validation Team can also confirm that the project participant is listed in tabular form in section A.4 of the PoA-DD /2/ and this information is consistent with the contact details provided in Appendix -1 of the PoA-DD /2/ and LoA /3/ issued. The Letter of Approval was also found to be unconditional with respect to §69 (a) to (d) of CDM VVS for PoAs (version 02.0) /B01-a/.</p> <p>The assessment above is in compliance with §70-§73 of CDM VVS for PoAs (version 02.0) /B01-a/.</p>

D.1.11.Authorization

Means of validation	DR,I
Findings	CAR-03 has been raised and satisfactorily closed.
Conclusion	In accordance with §69 of CDM PS for PoAs (version 02.0) /B01-b/, the coordinating/managing entity has obtained a Letter of Approval /3/ dated

	<p>15/04/2019 from the DNA Party involved in the proposed CDM PoA at the time of request for registration of the PoA. The coordinating/ managing entity has obtained from host Party a Letter of Authorization of its coordination of the proposed CDM PoA; this confirms to the requirement of §69-§71 of CDM PS for PoAs (version 02.0) /B01-b/. The project participant is Brighspark Energy Private Limited; the project is a unilateral project and hence India is the only country involved in the proposed Programme of Activities.</p> <p>India is the Host party and fulfils the requirements to participate in the CDM, having ratified the Kyoto Protocol in August 2002 and establishing a DNA in the “Ministry of Environment, Forest and Climate Change” as per the UNFCCC website /B13/.</p> <p>The Validation Team can confirm that the issued LoA /3/ from host party refers to the precise proposed PoA title as in the PoA-DD /2/. The Validation Team can also confirm that the project participant is listed in tabular form in section A.4 of the PoA-DD /2/ and this information is consistent with the contact details provided in Appendix -1 of the PoA-DD /2/ and LoA /3/ issued. The Letter of Approval was also found to be unconditional with respect to §69 (a) to (d) of CDM VVS for PoAs (version 02.0) /B01-a/.</p> <p>The assessment above is in compliance with §70-§73 of CDM VVS for PoAs (version 02.0) /B01-a/.</p>
--	---

D.1.12.Modalities of communication

Means of validation	DR,I
Findings	CL-01 has been raised and satisfactorily closed.
Conclusion	<p>The validation team confirms that the latest applicable template has been utilized by the CME for the MoC /4/. The MoC has been received directly from the signatories of the coordinating/managing entity with whom the DOE has signed contract for the validation service of this proposed project. The personal/corporate identity of the signatories, specimen signatures and legal status of the entity (CME), who has signed the MoC /4/ was confirmed through document review /4/ of following documents:</p> <ol style="list-style-type: none"> 1.Certificate of Incorporation of the CME 2.Certificate of Incorporation of Ecoeye Co. Ltd. including corporate identity of the signatory Mr. Soo Bok Rhee 3.Certificate of all matters for Korea Impact Carbon Corporation including corporate identity of the signatory Mr. Sang Sun Ha 4. Personal Identity of following signatories (of CME, Ecoeye and Korea Impact Carbon Corporation) <ul style="list-style-type: none"> • Mr. Ken Newcombe •Mr. Tridip Kumar Goswami •Mr.Soo Bok Rhee •Mr. Sang Sun Ha 5.Corporate identity of the signatories <ul style="list-style-type: none"> •Ministry of corporate affairs website screen shot as an evidence for the corporate identity of Mr. Ken Newcombe as an executive director of CME •Declaration by the Executive director (Mr. Ken Newcombe) of CME for corporate identity of Mr. Tridip Kumar Goswami 6.Declaration by the CME dated 08/05/2019 inline with the requirements of paragraph 82 of VVS, version 02.0. <p>The assessment above confirms to the requirement of §75 of CDM PS for PoAs (version 02.0) /B01-b/ and §81-§86 and §86 of CDM VVS for PoAs (version 02.0)</p>

/B01-a/.

D.1.13.Global stakeholder consultation

Means of validation	DR
Findings	--
Conclusion	<p>The process for global stakeholder consultation was conducted in accordance with the requirements of section 7.14 of the CDM VVS for PoAs (version 02.0) /B01-a/. The PoA-DD /01/, along with the specific first CPA-DD /02/² was published /13/ for global stakeholder consultation from 24/04/2018 to 23/05/2018.</p> <p>No comments have been received during the global stakeholder consultation process.</p>

D.2.Generic component project activities**D.2.1.General description of generic CPA**

Means of validation	DR, I
Findings	CAR-04 has been raised and satisfactorily closed.
Conclusion	<p>After review of the PoA-DD /2/ the validation team confirms that a typical CPA, will involve distribution, installation and maintenance of LED lamps amongst households, commercial shops & offices and SMEs. This replacement scheme is available only for grid connected consumers who have voluntarily decided to replace incandescent lamp (ICLs) or florescent tubes with LEDs.</p> <p>The ordinary incandescent bulb is energy inefficient for lighting when compared to LED. An ICL bulb requires 60 watts of power to emit around 700 lumens of light whereas LED bulb can emit 600-700 lumen by consuming just 9 watts of power saving 85% of the energy used by ICLs for the same light output. Thus the project activity will abate greenhouse gas emissions through the avoided use of electricity and corresponding reduced fossil fuel combustion. Other advantages are: Economic savings, reduction in heat load and hence cooling needs in small spaces, and reduced capital cost of bulbs as LEDs last for minimum 25,000-30,000 hours, the equivalent of 50-100 ICLs</p> <p>With reference to “CDM project standard for programmes of activities”; version 02.0, the SSC-CPAs will be small-scale Type II project activities “Energy efficiency improvement project activities that reduce energy consumption, on the supply and/or demand side, with a maximum energy saving of 60 GWh per year in any year of the crediting period”. Furthermore, in accordance to paragraph 124 (m) of the same standard, 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”, 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 is not required.</p> <p>Paragraph 9 of the methodological tool: “Demonstration of additionality of microscale project activities”; version 09.0 defines a micro-scale CDM project activity as -</p> <p>“Energy efficiency project activities that aim to achieve energy savings at a scale of no more than 20 gigawatt hours per year”</p> <p>As each of the CPAs that will be implemented under the PoA shall be applying the microscale threshold at the unit level rather than the aggregate level of the CPA, the term “project activities” shall be read as “units” and there is no obligation on</p>

² At the time of publication of PoA for GSC, the interface requires the specific CPA DD to be uploaded and for the same reason the specific CPA DD was uploaded. However as per PCP for PoA, version 02.0, it is referred that at the time of registration of PoA, only PoA DD is required to be submitted. Due to this reason, the specific CPA DD is not being submitted during the request for registration of the PoA.

	<p>part of the CME to demonstrate compliance of the CPA with the small- scale threshold at the aggregate level of the CPA (paragrapgh-14; Demonstration of additionality of microscale project activities”; version 09.0).</p> <p>This was further confirmed during the on-site visit interviews with the representatives of the CME and document reviews.</p> <p>The description provided for a generic CPA in part II of PoA-DD /2/ is in conformance to the requirements of §90 - §91 of CDM VVS for PoAs (version 02.0) /B01-a/.</p>
--	--

D.2.2. Selection of methodologies and standardized baselines

D.2.2.1. Deviation from methodologies and/or methodological tools

Means of validation	NA
Findings	NA
Conclusion	NA

D.2.2.2. Clarification on applicability of methodology, tool and/or standardized baseline

Means of validation	DR, I
Findings	NA
Conclusion	No clarification on applicability of methodology and or tools to the proposed PoA has been issued.

D.2.3. Application of methodologies and standardized baselines

D.2.3.1. General

Means of validation	DR, I
Findings	CAR-05 has been raised and satisfactorily closed.
Conclusion	<p>The methodology applied is AMS-II.C, Version: 15.0 /B02/. It is applicable to <i>that involve the installation of new, energy-efficient equipment (e.g. lamps, ballasts, refrigerators, motors, fans, air conditioners, pumping systems, and chillers) at one or more project sites. Retrofit as well as new construction (Greenfield) projects are included under this methodology.</i> By means of interviews with representatives of CME and document check it is confirmed that new LEDs will replace existing incandescent lamp (ICL) or fluorescent lamps under the SSC-CPAs of the PoA. The project lamps also carry a unique logo and thus are distinguishable.</p> <p>The applied methodology is correctly quoted and is identical to the version available on the UNFCCC website /B02/ /B07/. The applied version of the baseline and monitoring methodology /B02/ is valid at the time of submission for stakeholder consultation and also request for registration. All applicability criteria in the methodology, the applied tools or any other methodology component referred to therein are fulfilled.</p> <p>This is in conformance to the requirements of §92 & §97 of CDM VVS for PoAs (version 02.0) /B01-a/.</p>

D.2.3.2. Project boundary, sources and GHGs

Means of validation	DR, I
Findings	-
Conclusion	As per § 14 of the applied methodology AMS-II.C (version 15.0), the boundary of a typical CPA under this PoA confines to “The boundary includes each lighting fixture and circuit and any affected space heating and/or cooling systems in the case of a lighting replacement project”. Thus the project boundary for the CPAs is the physical, geographical location of each lighting equipment (i.e. each LED) installed. Using a tabular approach, the sources and gases has been correctly

	<p>identified in section I.4 of Part II of PoA-DD /2/.</p> <p>Validation team also confirms that the project boundary for the potential/future CPAs is based on the applied methodology /B02/ and the sources and gases within the boundary have been considered appropriately. This is in conformance with §100 & §101 of CDM Project standard for PoAs (version 02.0) and §98 of CDM VVS for PoAs (version 02.0) /B01-a/.</p>
--	---

D.2.3.3. Baseline scenario

Means of validation	DR, I
Findings	--
Conclusion	<p>The procedure to identify the most plausible baseline scenario derived from the applied methodology has been applied correctly and is transparently and sufficiently documented in the PoA-DD /2/.</p> <p>As prescribed by paragraph 51 of the applied methodology AMS-II.C (version 15.0), the assumed baseline scenario is that lighting by the project lamps would have been provided by the lamps collected and replaced by the project activity i.e. continued use of inefficient ICLs and/or fluorescent lamps in the target user of the PoA.</p> <p>As defined in the PoA, the CPAs will involve replacement of LED lamps. The replaced LED would be energy efficient in comparison to the conventional incandescent lamp (ICL) (or florescent tubes) and, reduces the need for electricity. The electricity is supplied by the grid which is pre-dominantly fossil fuel based. Therefore, in-directly GHG emissions (CO₂) from grid-connected power plants are reduced. Other sources/ gases are deemed negligible. In the absence of the project activity, the equivalent amount of electricity would have been supplied by the Indian grid, which is fed majorly based on fossil fuel fired plants.</p> <p>This is in conformance with §102 of CDM PS for PoAs (version 02.0) /B01-b/ and § 111 of CDM VVS for PoAs (version 02.0) /B01-a/.</p>

D.2.3.4. Estimation of emission reductions or net anthropogenic removals

Means of validation	DR, I
Findings	--
Conclusion	<p>The equations and choices provided in the applied methodology, AMS-II.C. (version 15.0) /B02/ are correctly quoted in the PoA-DD /2/. The emission reductions of the CPAs of the PoA would be calculated using the formulae mentioned in the applied methodology.</p> <p>The emission reduction by the SSC-CPAs will be calculated in accordance with equation 10, of the small scale methodology AMS II.C., Version 15.0.</p> $ER_y = (BE_y - PE_y) - LE_y$ <p>Where:</p> <p>ER_y Emission reductions in year y (tCO₂e)</p> <p>BE_y Baseline emission in year y (tCO₂e)</p> <p>PE_y Project emission in year y (tCO₂e)</p> <p>LE_y Leakage emission in year y (tCO₂e)</p> <p><u>Baseline Emission (BE_y)</u></p> <p>According to paragraphs 20 and 21 of the applied methodology, Option 1 i.e. 'Constant Load Equipments' is applicable for the present project. Baseline emission is calculated using the following equations:</p>

$$BE_y = E_{BL,y} \times EF_{CO2,ELEC,y} + Q_{ref,BL} \times GWP_{ref,BL}$$

As the project entails replacement of LED in place of ICLs or fluorescent lamps hence no refrigerant is involved. The above equation is then modified as:

$$BE_y = E_{BL,y} \times EF_{CO2,ELEC,y}$$

BE_y = Baseline emissions in year y (tCO₂e)

$E_{BL,y}$ = Energy consumption for the baseline (ICLs) in year y (kWh)

$EF_{CO2,ELEC,y}$ = Electricity emissions factor. If electricity displaced is grid, the emission factor in year y shall be calculated in accordance with the provisions in AMS-I.D (tCO₂/MWh). If electricity displaced is captive electricity, the emission factor in year y shall be calculated in accordance with the "Tool to calculate baseline, project and/or leakage emission from electricity consumption"

Energy consumption for baseline in year y is calculated as:

$$E_{BL,y} = \sum_i (n_i \times \rho_i \times o_i / (1 - l_y)) \times 0.95$$

Where

n_i = Number of pieces of equipment of the group of 'i' baseline equipment (ICLs or Fluorescent tubes) replaced.

ρ_i = Electrical power demand (kW) of the group of 'i' baseline equipment (e.g. 60W or 100W incandescent lamps). In the case of more than one type of ICLs (or Fluorescent tubes) are replaced, electrical power demand is the weighted average of the rated power (kW) of group i baseline equipment (ICLs or Fluorescent tubes).

o_i = Average annual operating hours of the group of 'i' baseline equipment (ICLs or Fluorescent tubes). The operating hours of the baseline equipment in year y can be determined using surveys by continuous measurement of usage hours of baseline equipment for a minimum of 90 days. For a large population of baseline equipment: (a) Use a representative sample (sampling determined by a minimum 90% confidence interval and 10% maximum error margin); (b) Apply correction for seasonal variation, if any; and (c) Ensure that sampling is statistically robust and relevant, i.e. the selection of the equipment to be analysed for operating hours has a random distribution and is representative of target population (size, location).

l_y = Average annual technical grid losses (transmission and distribution) during year y for the grid serving the locations where the devices are installed, expressed as a fraction. This value shall not include non-technical losses such as commercial losses (e.g. theft). The average annual technical grid losses will be determined using recent, accurate and reliable data available for the host country. This value can be determined from recent data published either by a national utility or an official governmental body. The reliability of the data used (e.g. appropriateness, accuracy/uncertainty, especially exclusion of non-technical grid losses) will be established and documented by the project participant. A default value of 0.1 shall be used for average annual technical grid losses, if no recent data are available or the data cannot be regarded accurate and reliable

0.95 = Net to gross adjustment factor

Project emission (PE_y)

Project emissions on account of electricity used by the project equipment shall be calculated according to following equations:

$$PE_y = E_{PE,y} \times EF_{CO2,ELEC,y} + PE_{ref,y}$$

PE_y = Project emissions in year y (tCO₂e)

$EP_{PJ,y}$ = Energy consumption in project activity in year y. This shall be determined ex post based on monitored values

$EF_{CO2,y}$ = Emission factor for electricity or thermal baseline energy. The emissions associated with grid electricity consumption should be calculated in accordance with the procedures of AMS-I.D. For fossil fuel displaced reliable local or national data for the emission factor shall be used; IPCC default values should be used only when country or project-specific data are not available or difficult to obtain

$PE_{ref,y}$ = Project emissions from physical leakage of refrigerant from the project equipment in year y (tCO₂e/y)

As the project entails replacement of LED in place of ICLs or fluorescent lamps hence no refrigerant is involved. The above equation is then modified as:

$$PE_y = E_{PE,y} \times EF_{CO2,ELEC,y}$$

$$E_{PE,y} = \sum_i (n_i \times \rho_i \times o_i / (1 - l_y)) \times 0.95$$

n_i = Number of group 'i' project devices operating during time interval t in year y.

ρ_i = Electrical power demand (kW) of the group 'i' project devices measured during the time interval t in year y.

o_i = Operating hours of group of 'i' project devices in the time interval t in year y

	<p><u>Leakage emission (LE_y)</u></p> <p>According to the applied methodology, leakage emissions must be considered if the energy efficiency technology involves equipment transferred from another activity. In the proposed CPA, LEDs that will be distributed to the households are not transferred from another activity; hence leakage emissions are not applicable.</p> <p>Hence</p> <p>$ER_y = BE_y - PE_y$</p> <p>The equations and choices provided in the applied methodology /B02/ are correctly quoted in the part II of PoA-DD /2/. The emission reductions due to the future CPAs will be calculated using the formulae mentioned in the applied methodology AMS-II.C (version 15.0) /B02/. The validation team conducted assessment of baseline emissions, project emission, leakage and emission reductions. The parameters and equations presented in the part II of PoA-DD /2/ have been compared with the information stipulated in the methodology /B02/.</p> <p>This is in conformance with §108, §110, §111, §112 of CDM PS for PoAs (version 02.0) /B01-b/ and §122, §123, §124, §125, §126 of CDM VVS for PoAs (version 02.0) /B01-a/.</p>
--	--

D.2.3.5. Monitoring plan

Means of validation	DR,I
Findings	CAR-06, CAR-07 and CAR-08 have been raised and satisfactorily closed.
Conclusion	<p>The monitoring plan as provided in the generic CPA includes information on objective, data recording, roles and responsibilities, data archiving and QA/QC procedures. The arrangements described in the generic CPA are common practice for such kind of project activities. The data will be archived for two years after the crediting period.</p> <p>The monitoring plan content has been checked in the generic CPA and compared against the requirements of the monitoring methodology /B02/.</p> <p>The monitoring plan is assessed to be appropriate for the technology type installed. All means of implementing the monitoring plan are in line with the applied and monitoring methodology /B02/ and SSC clarification SSC_740 /B09/. The validation team has no doubts that the monitoring arrangements as described in the part II of PoA-DD /2/ can be implemented properly.</p> <p>This is in conformance with §113, §114 of CDM PS for PoAs (version 02.0) /B01-b/ and §127 of CDM VVS for PoAs (version 02.0) /B01-a/.</p> <p>Please also refer to the appendix 5 for assessment of sampling plan.</p>

D.2.4. Crediting period type and duration

Means of validation	DR,I
Findings	--
Conclusion	<p>As per the PoA DD /01/, a renewable crediting period of 7 years has been chosen.</p> <p>This is in conformance with §118 of CDM PS for PoAs (version 02.0) /B01-b/ and §135 of CDM VVS for PoAs (version 02.0) /B01-a/.</p>

D.2.5. Eligibility criteria for inclusion of CPAs

No.	Eligibility criterion – Category/Required condition	Means of validation	Findings	Conclusion
1	Geographical Boundary- Geographical boundaries of CPAs must be consistent with the geographical boundary of the PoA which has been recognized as the boundary of India.	DR,I	--	<p>According to §124 (a), of the CDM project standard for programmes of activities, version 2.0, the geographical boundary of each CPA, shall be consistent with the geographical boundary set in the PoA. The PoA boundary is set as India. Validation team based on review of PoA-DD /02/ confirms that the eligibility criteria is defined in accordance with the project standard.</p> <p>Furthermore, the eligibility criterion – category, including the conditions provide sufficient information for the corresponding CPAs. The description in the PoA-DD including the supporting evidence for inclusion provides information to meet the requirement and is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding CPAs in the PoA.</p>

2	<p>Double counting of GHG emission reduction:</p> <p>Conditions to avoid double counting of GHG emission reductions or net anthropogenic GHG removals, such as unique identifications of product and end user locations (e.g. programme logo)</p>	DR,I	--	<p>Validation team confirms that this eligibility criterion has been sufficiently set for all CPAs in line with §124 (b) of the CDM project standard for programmes of activities, version 2.0. If the CPAs and the LED met this criteria including LED with programme logo, all CPAs shall avoid double-counting of emission reductions. Validation team based on review PoA-DD /02/ confirms that the eligibility criteria is defined in accordance with the project standard.</p> <p>Furthermore, the eligibility criterion – category, including the conditions provide sufficient information for the corresponding CPAs. The description in the PoA-DD including the supporting evidence for inclusion provides information to meet the requirement and is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding CPAs in the PoA.</p>
---	---	------	----	---

3	<p>Exclusivity Clause: The CPA shall be exclusively bound to the PoA. It should not</p> <ol style="list-style-type: none"> 1. Be registered as a standalone CDM project activity, 2. Be included in another registered PoAs, 3. Be a project activity that has been deregistered 	DR,I	--	<p>Validation team confirms that this eligibility criterion has been sufficiently set for all CPAs in line with §124 (c) of the CDM project standard for programmes of activities, version 2.0. All CPAs shall avoid double-registration of CPA (and double counting) by declaration by the CME after checking the UNFCCC homepage. Validation team based on review of PoA-DD /02/ confirms that the eligibility criteria is defined in accordance with the project standard.</p> <p>Furthermore, the eligibility criterion – category, including the conditions provide sufficient information for the corresponding CPAs. The description in the PoA-DD including the supporting evidence for inclusion provides information to meet the requirement and is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding CPAs in the PoA.</p>
---	---	------	----	--

4	<p>Technology:</p> <p>1.LEDs distributed under the CPAs must conform to BIS standard- IS 16102 Part 1 & Part 2 or an equivalent national or international standard</p> <p>2.Lumen output (service level for lighting equipment) of the LEDs must be within 90%-150% range of the lumen output of the baseline lamps.</p> <p>3.Rated average lifetime of project lamps must be declared ex-ante in section 3 of CPA DD</p> <p>4.Other technical specifications such as rated wattage, working Voltage, colour temperature, CRI and power factor must be clearly indicated in Section A.3 of CPA DD.</p>	DR,I	--	<p>Validation team confirms that this eligibility criterion has been sufficiently set for all CPAs inline with the requirements and applicability conditions prescribed by the methodology, as well as §124 (d) including foot note 23 and 24 and 124 (f) of the CDM project standard for programmes of activities, version 2.0.</p> <p>All CPAs shall apply the methodology AMS-II.C., version 15.0. Provided the CPA met the eligibility criteria, the technology i.e. LED under the CPAs of the PoA will eligible as per AMS II.C version 15.0. Validation team based on review of PoA-DD /02/ confirms that the eligibility criteria is defined in accordance with the project standard.</p> <p>Furthermore, the eligibility criterion – category, including the conditions provide sufficient information for the corresponding CPAs. The description in the PoA DD including the supporting evidence for inclusion provides information to meet the requirement and is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding CPAs in the PoA. Please also refer to the closure of CAR-09.</p>
---	--	------	----	---

5	<p>Start Date:</p> <p>Start date of the CPA should be on or after the start date of the PoA-SHINE – Distribution of LED Light bulbs in India and its crediting period shall lie within the lifetime of the PoA</p>	DR,I	--	<p>Validation team confirms that this eligibility criterion has been sufficiently set for all CPAs inline with the requirements §124 (e) of the CDM project standard for programmes of activities, version 2.0. The start date of a CPA shall be on or after the PoA start date.</p> <p>Validation team based on review of PoA-DD /02/ confirms that the eligibility criteria is defined in accordance with the project standard.</p> <p>Furthermore, the eligibility criterion – category, including the conditions provide sufficient information for the corresponding CPAs. The description in the PoA DD including the supporting evidence for inclusion provides information to meet the requirement and is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding CPAs in the PoA. Please also refer to the closure of CAR-02.</p>
---	--	------	----	--

6	<p>Compliance with applicability conditions of methodology:</p> <p>CPA must comply with the applicability conditions of the Methodology AMS II.C. version 15.0 that has been defined in section I.2 of the PoA DD part II. In addition, the following applicability criteria will apply</p> <ol style="list-style-type: none"> 1. Rated average life of group 'i' project lamp shall be declared ex-ante. 2. Project lamps to have clear unique identification mark. 3. Measures to limit undesired secondary market effects by proper destruction of baseline lamps in addition to adopting one of the following approaches-a) directly installing project lamps; b) charging minimum price for the project lamps; c) restricting the no. of lamps to 6/household 	DR,I	--	<p>Validation team confirms that this eligibility criterion has been sufficiently set for all CPAs inline with the requirements §124 (f) and §124 (h) of the CDM project standard for programmes of activities, version 2.0.</p> <p>All CPA utilizing this generic CPA-DD shall apply and should comply with the small-scale methodology AMS-II.C, version 15.0. Validation team based on review of PoA-DD /02/ confirms that the eligibility criteria is defined in accordance with the project standard.</p> <p>Furthermore, the eligibility criterion – category, including the conditions provide sufficient information for the corresponding CPAs. The description in the PoA-DD including the supporting evidence for inclusion provides information to meet the requirement and is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding CPAs in the PoA. Please also refer to the closure of CAR-05.</p>
---	---	------	----	---

7	<p>Additionality: SSC-CPA shall fulfil the requirement As stated in Section C of this document.</p>	DR,I	--	<p>Validation team confirms that this eligibility criterion has been sufficiently set for all CPAs as per §124 (g) of the CDM project standard for programmes activities, version 2.0.</p> <p>All CPAs shall be additional to be included in the PoA provided they met this eligibility criteria of the PoA. This is adequately prescribed in section C of the PoA-DD. Validation team based on review of PoA-DD /02/ confirms that the eligibility criteria is defined in accordance with the project standard.</p> <p>Furthermore, the eligibility criterion – category, including the conditions provide sufficient information for the corresponding CPAs. The description in the PoA-DD including the supporting evidence for inclusion provides information to meet the requirement and is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding CPAs in the PoA. Please also refer to the closure of CL-01 and CAR-15.</p>
---	---	------	----	---

8	<p>Local Stakeholder Consultation and Environmental Impact Analysis (EIA):</p> <p>The Local Stakeholder Consultation has been conducted at PoA Level and the EIA process is also performed at PoA level. Each CPA will take into consideration the comments from the Stakeholder Consultation.</p>	DR,I	--	<p>As per the PoA DD /02/, the local Stakeholder Consultation (LSC) and Environmental Impact Analysis (EIA) are on PoA Level. Validation team confirms that this eligibility criterion has been sufficiently set for all CPAs as per §124 (i) of the CDM project standard for programmes of activities, version 2.0. Validation team based on review of PoA-DD /02/ confirms that the eligibility criteria is defined in accordance with the project standard.</p> <p>Furthermore, the eligibility criterion – category, including the conditions provide sufficient information for the corresponding CPAs. The description in the PoA-DD including the supporting evidence for inclusion provides information to meet the requirement and is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding CPAs in the PoA.</p>
---	--	------	----	---

9	<p>Diversion of ODA funds: Funding from Annex I parties for the implementation of the PoA, if any, does not result in a diversion of official development assistance (ODA)</p>	DR,I	--	<p>Validation team confirms that this eligibility criterion has been sufficiently set for all CPAs as per §35 and §124 (j) in the CDM project standard for programmes of activities, version 02. Validation team based on review of PoA-DD /02/ confirms that the eligibility criteria is defined in accordance with the project standard.</p> <p>Furthermore, the eligibility criterion – category, including the conditions provide sufficient information for the corresponding CPAs. The description in the PoA-DD including the supporting evidence for inclusion provides information to meet the requirement and is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding CPAs in the PoA.</p>
---	--	------	----	---

10	<p>Target group:</p> <p>LEDs distributed under the SHINE scheme shall be distributed only to grid-connected consumers who may be domestic, commercial or small and medium enterprises.</p>	DR,I	--	<p>Validation team confirms that this eligibility criterion shall ensure that all CPAs shall specify the target group for all eligible CPAs in order to confirm to the applied methodology, as well as the PoA stated policy, operational and management framework inline with the requirements of §124 (k) including foot note 28 of the CDM project standard for programmes of activities, version 2.0. Validation team based on review of PoA-DD /02/ confirms that the eligibility criteria is defined in accordance with the project standard.</p> <p>Furthermore, the eligibility criterion – category, including the conditions provide sufficient information for the corresponding CPAs. The description in the PoA-DD including the supporting evidence for inclusion provides information to meet the requirement and is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding CPAs in the PoA.</p>
----	--	------	----	--

11	<p>Sampling: Sampling of</p> <ul style="list-style-type: none"> •Operating hours of replaced baseline lamps/ installed project lamps •Number of project lamps placed in service and operating <p>To be carried out in accordance with the “Standard: Sampling and surveys for CDM project activities and programme of activities”</p>	DR,I	--	<p>Validation team confirms that this eligibility criteria shall ensures that all CPAs in the PoA shall apply to the sampling plan of the PoA. This eligibility criterion is in accordance with AMS-II.C, version 15.0 and “Standard: Sampling and surveys for CDM project activities and programme of activities”. Validation team based on review of PoA-DD /02/ confirms that the eligibility criteria is defined in accordance with the project standard.</p> <p>Furthermore, the eligibility criterion – category, including the conditions provide sufficient information for the corresponding CPAs. The description in the PoA-DD including the supporting evidence for inclusion provides information to meet the requirement and is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding CPAs in the PoA. Please also refer to the closure of CAR-06, CAR-07 and CAR-08.</p>
----	---	------	----	---

12	<p>Microscale threshold:</p> <p>The CPA must consist solely of units that qualify as “microscale CDM units” as defined in the “Methodological tool: Demonstration of additionality of microscale project activities”</p>	DR,I	--	<p>Validation team confirms that this eligibility criterion has been sufficiently set for all CPAs inline with the requirements of §124 124 (g), 124 (m), 124 (n) of the CDM project standard for programmes of activities, version 2.0. The CME has selected to apply the micro-scale threshold at the unit level rather than at the aggregate level of the CPA. This means that any number of LEDs can be implemented under one CPA. Validation team based on review of PoA-DD /02/ confirms that the eligibility criteria is defined in accordance with the project standard.</p> <p>Furthermore, the eligibility criterion – category, including the conditions provide sufficient information for the corresponding CPAs. The description in the PoA-DD including the supporting evidence for inclusion provides information to meet the requirement and is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding CPAs in the PoA.</p>
----	--	------	----	---

13	<p>Debundling:</p> <p>Each CPA will demonstrate that it consists solely of units that qualify as “microscale CDM units” as defined in the “Methodological tool: Demonstration of additionality of microscale project activities” in order to exempt it from performing debundling check (paragraph 124 (n) of CDM Standard for Programme of Activities ; version 02.0).</p>	DR,I	--	<p>Validation team confirms that this eligibility criterion has been sufficiently set for all CPAs inline with the requirements of §124 124 (g), 124 (m), 124 (n) of the CDM project standard for programmes of activities, version 2.0. The CME has selected to demonstrate that it consists solely of units that qualify as “microscale CDM units” in order to exempt it from performing debundling check. Validation team based on review of PoA-DD /02/ confirms that the eligibility criteria is defined in accordance with the project standard.</p> <p>Furthermore, the eligibility criterion – category, including the conditions provide sufficient information for the corresponding CPAs. The description in the PoA-DD including the supporting evidence for inclusion provides information to meet the requirement and is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding CPAs in the PoA.</p>
----	---	------	----	---

14	<p>Destruction of baseline lamps:</p> <p>CPA under the PoA shall specify the method by which baseline lamps are collected and destroyed.</p>	DR,I	--	<p>Validation team confirms that this eligibility criterion has been sufficiently set for all CPAs inline with the requirements of §124 (h) of the CDM project standard for programmes of activities, version 2.0.</p> <p>All CPA utilizing this generic CPA-DD shall apply and should comply with the small-scale methodology AMS-II.C, version 15.0. Validation team based on review of PoA-DD /02/ confirms that the eligibility criteria is defined in accordance with the project standard.</p> <p>Furthermore, the eligibility criterion – category, including the conditions provide sufficient information for the corresponding CPAs. The description in the PoA-DD including the supporting evidence for inclusion provides information to meet the requirement and is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding CPAs in the PoA.</p>
----	--	------	----	---

15	<p>CER ownership:</p> <p>Each CPA will assure ownership of the CERs is secured by the CME or CPA Implementer</p>	DR,I	--	<p>Validation team confirms that this eligibility criterion has been sufficiently set for all CPAs inline with the requirements §124 (h) of the CDM project standard for programmes of activities, version 2.0.</p> <p>All CPA utilizing this generic CPA-DD shall apply and should comply with the small-scale methodology AMS-II.C, version 15.0. Validation team based on review of PoA-DD /02/ confirms that the eligibility criteria is defined in accordance with the project standard.</p> <p>Furthermore, the eligibility criterion – category, including the conditions provide sufficient information for the corresponding CPAs. The description in the PoA-DD including the supporting evidence for inclusion provides information to meet the requirement and is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding CPAs in the PoA.</p>
----	--	------	----	--

SECTION E.Internal quality control

>>

The final validation report has undergone a technical review and quality review before being submitted to the project participant(s)/coordinating managing entity and UNFCCC Executive Board. A technical reviewer qualified in accordance with CCIPL's qualification scheme for CDM validation and verification performed the technical review.

SECTION F.Validation opinion

>>

The DOE (Carbon Check (India) Private Ltd.) hereafter referred to as CCIPL, has been appointed by Brightspark Energy Private Limited (The CME) to perform validation of their PoA "PoA : SHINE – Distribution of LED Lightbulbs in India". The validation was performed on the basis of the

UNFCCC criteria for the Clean Development Mechanism. The scope of the validation is defined as an independent and objective review of the programme of activities design document (PoA-DD) /02/, the project's baseline establishment and monitoring plan and other relevant documents. The information in these documents is reviewed against CDM Validation and Verification Standard for PoAs, Version 02.0 /B01-a/, Kyoto Protocol requirements, CDM Modalities & Procedures and subsequent decisions and guidance by the COP/MOP and CDM Executive Board.

The report is based on the assessment of the PoA-DD /02/ undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to document reviews, stakeholder interviews, review of the applicable/applied methodologies /B02/ and their underlying formulae and calculations.

The Validation team confirms the contractual relationship /08/ signed between the DOE, CCIPL and the CME (BEPL). The team assigned to the validation meets the CCIPL internal procedures including the UNFCCC requirements for the team composition and competence. The validation team has conducted a thorough contract review as per UNFCCC and CCIPL's procedures and requirements.

Validation methodology and process

The validation has been performed as described in the VVS (version 02.0) /B01-a/ and constitutes the following steps:

- Publication of the PoA-DD /01/ and the real case CPA-DD on the UNFCCC website /13/ (24/04/2018 to 23/05/2018) for GSC
- Document review of data and information (PoA-DD /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 /B02/ being applied and the appropriateness of formulae and accuracy of calculations).
- Cross checks between information provided in the PoA-DD and information from other sources
- Follow up actions for cross checking data and off-site assessment / interviews
- Reference to available documents
- Issuance of Validation Report

Validation criteria

The following CDM requirements have been considered:

- Article 12 of the Kyoto Protocol
- Modalities and procedures for CDM (CDM M & P)
- Subsequent decisions by the COP/MOP and CDM Executive Board
- Host country criteria
- Criteria given to provide for consistent project operations, monitoring and reporting.

The host party is India and the project is a unilateral PoA. The host party DNA LoA confirms that the party fulfils the participation requirements and have approved and authorized the project and the project participants /CME The DNA from India has confirmed that the project assists in achieving sustainable development.

The PoA correctly applies the baseline and monitoring methodology /B02/:

- AMS-II.C.- Demand-side energy efficiency activities for specific technologies (version 15.0)

The PoA will result in emissions reductions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the PoA 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 PoA.

The validation did not reveal any information that indicates that the PoA can be seen as a diversion of ODA funding /05/.

The PoA-DD /02/ contains monitoring plan for the monitoring of the emission reductions from the PoA. The monitoring arrangement described in the monitoring plan is feasible within the project design and its CCIPL's opinion that the project participants are able to implement the monitoring plan.

The validation report describes a total of 17 findings, which include:

- 15 Corrective Action Requests (CARs);
- 02 Clarification Requests (CLs);
- 00 Forward Action Requests (FARs);

All findings are satisfactorily closed.

Carbon Check (India) Private Ltd. concludes the validation with a positive opinion that the CDM PoA "SHINE – Distribution of LED Lightbulbs in India" in India, as described in the PoA-DD /02/, meets all applicable CDM requirements, including those specified in the CDM Project Standard for PoAs /B01-b/, relevant methodologies /B02/ and article 12 of the Kyoto Protocol, paragraph 37 of the CDM modalities and procedures and the subsequent decisions by the COP/MOP and CDM Executive Board.

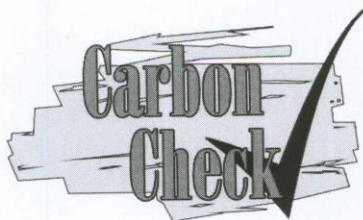
Carbon Check (India) Private Ltd., therefore requests the registration of the project activity as a CDM PoA with UNFCCC.

Appendix 1.Abbreviations

Abbreviations	Full Texts
BE	Baseline Emission
BEPL	Brightspark Energy Private Limited
CAR	Corrective Action Request
CCIPL	Carbon Check (India) Private Ltd.
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CER	Certified Emission Reduction
CPA	Component Project Activity
CPA-DD	Component Project Activity Design Document
CER	Certified Emission Reduction
CL	Clarification Request
CME	Co-ordinating or Managing Entity
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
COP/MOP	Conference of Parties/ Meeting of Parties
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EB	Executive Board
EIA	Environmental Impact Assessment
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse Gas
GSC	Global Stakeholders Consultation
GWh	Giga Watt Hours

I	Interview
IPCC	Intergovernmental Panel on Climate Change
kW	Kilo Watt
kWh	Kilo Watt Hours
LE _y	Leakage
LoA	Letter of Approval
LSC	Local Stakeholder Consultation
MoV	Means of Verification
MOC	Modalities of Communications
MW	Mega Watt
MWh	Mega Watt Hours
NA	Not applicable
NCV	Net Calorific Value
NGO	Non-Government Organisation
NO _x	Nitrogen Oxides
ODA	Official Development Assistance
OSV	On Site Visit
PE	Project Emission
PoA	Programme of Activities
PoA-DD	Programme of activities design document
PP	Project Participant
PS	Project Standard
PCP	Project Cycle Procedure
SD	Sustainable Development
T	Tonne
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
PoA-DD	Programme of activities design document

Appendix 2. Competence of team member and technical reviewers



Carbon Check (India) Private Ltd.

Vikash Kumar Singh

has been qualified as per CCIPL's internal qualification procedures, in accordance with requirements of Accreditation Standard (version 07.0):

For following functions:

Validator ☒ Team Leader ☒ Technical reviewer ☒
 Verifier ☒ Technical Expert ☒ Local Expert¹ ☒

In the following Technical Areas:

TA 1.1 ☒ TA 3.1 ☒ TA 5.2 ☐ TA 9.2 ☐ TA 13.2 ☒
 TA 1.2 ☒ TA 4.1 ☒ TA 8.1 ☐ TA 10.1 ☐ TA 14.1 ☐
 TA 2.1 ☐ TA 5.1 ☐ TA 9.1 ☐ TA 13.1 ☒

Mr. Amit Anand
CEO

Date of Approval
24/12/2018

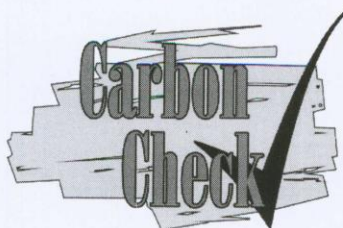
Valid Till
23/12/2019

Revision History of the Document

26/12/2014	Initial Adoption
24/12/2015	Annual Revision
20/01/2016	Interim Revision for office address change
23/12/2016	Annual Revision
24/12/2017	Annual Revision
24/12/2018	Annual Revision

¹ India, South Africa

CARBON CHECK (INDIA) PRIVATE LIMITED
 Registered in India: U74930DL2012PTC232495
 Regd. Off: 2071/38, 2nd Floor, Naiwala, Karol Bagh, New Delhi - 110005
 Corporate off: G 49 & 50, 3rd Floor, Sector - 3, NOIDA (Uttar Pradesh) - 201301
 Tel: +91 120 4373114 | URL: www.carboncheck.co.in
 e-mail: info@carboncheck.co.in



Carbon Check (India) Private Ltd.

Sanjay Agarwalla

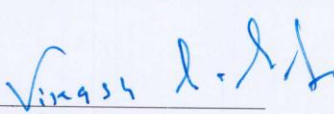
has been qualified as per CCIPL's internal qualification procedures, in accordance with requirements of Accreditation Standard (version 06.0):

For following functions:

Validator	<input checked="" type="checkbox"/>	Team Leader	<input checked="" type="checkbox"/>	Technical reviewer	<input checked="" type="checkbox"/>
Verifier	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>	Local Expert ¹	<input checked="" type="checkbox"/>

In the following Technical Areas:

TA 1.1	<input checked="" type="checkbox"/>	TA 3.1	<input checked="" type="checkbox"/>	TA 5.2	<input checked="" type="checkbox"/>	TA 9.2	<input checked="" type="checkbox"/>	TA 13.2	<input type="checkbox"/>
TA 1.2	<input checked="" type="checkbox"/>	TA 4.1	<input checked="" type="checkbox"/>	TA 8.1	<input type="checkbox"/>	TA 10.1	<input type="checkbox"/>	TA 14.1	<input type="checkbox"/>
TA 2.1	<input checked="" type="checkbox"/>	TA 5.1	<input checked="" type="checkbox"/>	TA 9.1	<input checked="" type="checkbox"/>	TA 13.1	<input checked="" type="checkbox"/>		


Mr. Vikash Kumar Singh
Compliance Officer


Mr. Amit Anand
CEO

Date of Approval
24/12/2018

Valid Till
23/12/2019

Revision History of the Document

26/12/2014	Initial Adoption
24/12/2015	Annual Revision
20/01/2016	Interim Revision for office address change
23/12/2016	Annual Revision
24/12/2017	Annual Revision
24/12/2018	Annual Revision

¹ India

CARBON CHECK (INDIA) PRIVATE LIMITED
Registered in India: U74930DL2012PTC232495
Regd. Off: 2071/38, 2nd Floor, Naiwala, Karol Bagh, New Delhi - 110005
Corporate off: G 49 & 50, 3rd Floor, Sector - 3, NOIDA (Uttar Pradesh) - 201301
Tel: +91 120 4373114 | URL: www.carboncheck.co.in
e-mail: info@carboncheck.co.in

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
/01/	CME	Webhosted PoA-DD	Version 01; Dated 08/04/2018	CME
/02/	CME	Final PoA DD	Version 07; dated 24/07/2019	CME
/03/	DNA	Letter of Approval from Host party DNA (India)	LoA reference number: 13008/81/2017-CC dated 15/04/2019	CME
/04/	CME	1.Modalities of Communication 2. Certificate of Incorporation of the CME 3.Certificate of Incorporation of Ecoeye Co. Ltd. including corporate identity of the signatory Mr. Soo Bok Rhee 4.Certificate of all matters for Korea Impact Carbon Corporation including corporate identity of the signatory Mr. Sang Sun Ha 5. Personal Identity of following signatories (of CME, Ecoeye and Korea Impact Carbon Corporation) <ul style="list-style-type: none"> • Mr. Ken Newcombe •Mr. Tridip Kumar Goswami •Mr.Soo Bok Rhee •Mr. Sang Sun Ha 6.Corporate identity of the signatories <ul style="list-style-type: none"> • Ministry of corporate affairs website screen shot as an evidence for the corporate identity of Mr. Ken Newcombe as an executive director of CME •Declaration by the Executive director (Mr. Ken Newcombe) of CME for corporate identity of Mr. Tridip Kumar Goswami 7.Declaration by the CME dated 08/05/2019 inline with the requirements of paragraph 82 of VVS, version 02.0.	Signed on 09/05/2019	CME
/05/	CME	CME declaration for non-involvement of any public funding from Annex I countries for the PoA and the CPA	02/08/2018	CME
/06/	CME	Certificate of Incorporation of the CME	-	CME
/07/	CME	CME Management System Manual	-	CME
/08/	CC IPL	Validation service contract between the CME (BEPL) and the DOE (CC IPL)	Dated: 08/03/2018	CME
/09/	CME	Documents pertaining to local stakeholder consultation done for the PoA: a)Media (emails with list of invitees, newspaper advertisement) used for inviting comments from PoA stakeholders b)Attendance sheet of the physical meeting		

		held on 07/03/2018 c) Meeting report with list of comments raised of the physical meeting held on 07/03/2018 d) Photographs of the physical meeting held on 07/03/2018		
/10/	CME	Self declaration from the CME that the PoA is a voluntary action and shall contain "SHINE" logo on LEDs to be implemented under CPA.	02/08/2018	CME
/11/	CME	Screen shot of the data management system (DMS) used for the SHINE POA	--	CME
/12/	CME	Template declaration (relinquishment of CER from end user to CME) generated from online DMS of SHINE POA upon registration of end-user in the database	--	CME
/13/	UNFCCC	Email from UNFCCC confirming publication of PoA on UNFCCC website for GSC	24/04/2018	CC IPL
/14/	CME	Request for quotation (RFQ) prepared (which specifies the technical specification of the LED) and sent by CME to potential LED manufacturers for the procurement of LED under the PoA and 1 st Specific CPA	-	CME
/15/	CQC & TSNPDCL	MOU between CME & DISCOM- TSNPDCL for the 1 st CPA of the PoA- illustrating the roles & responsibility	15/02/2018	CME
/16/	Afferent Wearable Tech Pvt Ltd	Product specification/Manual of the hour meter used for the monitoring of operating hours.	--	CME
/17/	CME	Interim version of PoA-DDs: 1. PoA-DD- version 02 2. PoA-DD-version 03 3. PoA DD Version 04 4. PoA DD Version 05 5. PoA DD Version 06	07/09/2018 12/10/2018 12/04/2019 02/05/2019 17/05/2019	CME
/18/	CME	Template Investment Analysis Spread sheet	--	CME
/B01/	UNFCCC	a) Validation and Verification Standard for PoA, Version 02.0 b) Project Standard for PoA, Version 02.0 c) Project Cycle Procedure for PoA, Version 02.0	http://cdm.unfccc.int/	Others
/B02/	UNFCCC	AMS-II.C- Demand-side energy efficiency activities for specific technologies, Version 15.0	http://cdm.unfccc.int/	Others
/B03/	UNFCCC	SSC_740: Clarification on frequency of monitoring of oi (operating hours of project lamps) and ni (number of project lamps that are operational during time interval t) under AMS-II.C	http://cdm.unfccc.int/	Others
/B04/	UNFCCC	Instructions for filling out the project design document form for CDM programme of activities (Version 09.0)	http://cdm.unfccc.int/	Others
/B05/	UNFCCC	Glossary of CDM Terms, Version 09.1	http://cdm.unfccc.int/	Others
/B06/	UNFCCC	General Guidelines to SSC CDM methodologies, Version 22.1	http://cdm.unfccc.int/	Others
/B07/	UNFCCC	Websites: http://cdm.unfccc.int/	http://cdm.unfccc.int/	Others

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

Table 1. CLs from this validation

CL ID	01	Section no.	D.1.4	Date: 07/08/2018
Description of CL				
PoA-DD /01/ refers to § 11 of the Methodological tool for demonstration of additionality of SSC project activities and claims that the documentation of barriers, is not required for the positive list of technologies and project activity types that are defined as automatically additional for project sizes up to and including the small-scale CDM thresholds.				
CME is requested to clarify as how the CPA of the PoA comply with the requirement of “Appendix. Provisions of small-scale and microscale tools for automatic additionality” of the stated tool as the threshold of the CPA of the PoA is not below the SSC threshold due to adoption of §120 (m) of CDM Project standard for program of activities, Version 01.0.				
CME response				Date:
Each LED distributed under the PoA shall lead to an energy saving of less than 20 GWh per annum thus qualifying as microscale CDM unit (paragraph 4 of methodological tool- Demonstration of additionality of microscale project activities & CLA_TOOL_0026); hence the CPAs included under the present PoA are exempted from demonstrating compliance with small scale threshold throughout the crediting period as per paragraph 124 (m) of CDM project standard for programmes of activities; in which case, small scale CPA can exceed the SSC threshold (CLA_TOOL_0026).				
As per paragraph 124 (g) ii of CDM project standard for programme of activities, version 02.0- “If the generic CPA is small-scale.....and applies only small scale methodologies, the conditions shall derive from the requirements contained in the additionality section of the applied methodologies, or if such section does not exist, from the “Methodological tool: Demonstrating additionality of small-scale project activities” and, where necessary, any applicable additionality tool;				
Since the applied methodology AMS II.C, version 15 contains an additionality section according to which- “If the project lamps sold or distributed by the project coordinator to households are self-ballasted LED lamps, the project activity is deemed automatically additional”, the CPAs to be included under the PoA will apply this criterion to demonstrate auto additionality.				
Documentation provided by CME				
revised PoA-DD				
DOE assessment				Date: 24/04/2019
Based on review of above response and revised PoA-DD, validation team confirms that future CPAs of the PoA are not required to demonstrate presence of barriers provided they confirm to conditions as stipulated above and in the PoA-DD (as a part of eligibility criteria demonstration). CL is thus closed.				
Please refer to the closure of CAR-15 which has been raised upon receipt of I & R comments from UNFCCC.				

CL ID	02	Section no.	D.1.12	Date: 07/08/2018
Description of CL				
CME is requested to provide Modalities of communication for the PoA.				
CME response				Date: 07/09/2018
Modalities of communication for the PoA will be submitted.				
Documentation provided by CME				
--				
DOE assessment				Date: 03/10/2018
MOC has not been submitted and thus CL is still open.				

CME response	Date: 12/05/2019
<i>MOC signed and submitted.</i>	
Documentation provided by CME	
<i>MOC statement</i>	
DOE assessment	Date: 14/05/2019
CME has submitted revised MOC; checked and confirmed by the DOE. CL is closed.	

Table 2.CARs from this validation

CAR ID	01	Section no.	D.1.1	Date: 07/08/2018
Description of CAR				
Inline with the requirement of § 31 of Standard: CDM project standard for programmes of activities Version 01.0, the coordinating/managing entity is requested to determine the type of CDM PoA it intends to design and implement.				
CME response				Date: 07/09/2018
<i>The CME intends to develop the PoA that will include only small-scale non-AR CPAs. The same has been mentioned in revised PoA-DD.</i>				
Documentation provided by CME				
<i>Revised PoA, version 02.0</i>				
DOE assessment				Date: 03/10/2018
Based on revised PoA-DD, validation team confirms that type of CDM PoA which the CME intends to design and implement has been explicitly written in the PoA-DD; checked and confirmed by the validation team; CAR is closed.				

CAR ID	02	Section no.	D.1.5	Date: 07/08/2018
Description of CAR				
The start date of the PoA is 08/01/2018, which is the date of notifying UNFCCC and DNA. Validation team has reviewed the UNFCCC interface and found that the notification was sent by C-Quest Capital Malaysia Limited and not the CME.				
CME response				Date: 07/09/2018
<i>At the time of conceptualization, it was decided that C-Quest Capital Malaysia Limited would act as the CME for the PoA. The same was mentioned in the prior consideration form that was submitted to UNFCCC. However, at the time of submission of PoA-DD for global stakeholder consultation, Brightspark Energy Private Limited took over as the CME of the PoA.</i>				
<i>According to paragraph 41 of CDM project standard for programme of activities, Version 01.0, the start date of the PoA has to be determined in accordance with Glossary: CDM Terms where the PoA start date has been defined as-“the date on which the CME officially notifies the secretariat and the DNA(s) of the host Party(ies) of its intention to seek the CDM status, or the date of publication of the PoA-DD for global stakeholder consultation, whichever is earlier.”</i>				
<i>For the present PoA, date of publication of PoA-DD for global stakeholders' consultation which is 24/04/2018 will be considered as the start date as the current version of CDM-PoA-PC-Form does not have any option for corrections thus making it mandatory for submission of a new prior consideration form in the event of which publication of PoA -DD for GSC would be the earlier activity thus qualifying for start date as per Glossary-CDM terms..</i>				
<i>Moreover, Clause 2 (section II) of UNFCCC's Guidelines on the Demonstration and Assessment of Prior Consideration of the CDM, (Version 04), states that the notification for prior consideration via standardized form F-CDM-Prior Consideration “is not necessary if a project design document (PDD) has been published for global stakeholder consultation or a new methodology proposed to the Executive Board for the specific project before the project activity start date”. For the concerned project, the PoA-DD was published for Global Stakeholders Consultation on 24/04/2018 whereas the distribution of LED bulbs under first CPA is expected to start from 10th of August 2018.</i>				
Documentation provided by CME				
<i>Revised PoA-DD, version 02.0</i>				
DOE assessment				Date: 03/10/2018

Since the notification (dated 08/01/2018) as referred in the webhosted PoA DD was sent by a different entity (not the CME in the PoA-DD), validation team deemed this not applicable for the subject project under consideration. Hence, the CME has revised the start date of the PoA as the date of publication of PoA Documents for GSC on 24/04/2018. The same is acceptable to the validation team. CAR is closed.

CAR ID	03	Section no.	D.1.10 & D.1.11	Date: 07/08/2018
Description of CAR				
As per § 69 & § 70 of Standard: CDM project standard for programmes of activities Version 01.0, Project participants or the coordinating/managing entity shall obtain a letter of approval and authorization from the DNA of each Party involved in the proposed CDM project activity or PoA which is a prerequisite for request for registration for the PoA. CME needs to submit the LoA from the involved party(ies) in the PoA.				
CME response				Date: 07/09/2018
<i>Currently only Brightspark Energy Private Limited (CME for the PoA) is the project participant with C-Quest Capital and ECOEYE Co Ltd both withdrawing from the PoA. However, Ecoeye will continue to function as the CPA implementer for CPA 1. The same has been updated in the PoA. Letter of Approval and authorization from Indian DNA will be submitted as soon as it is issued to BEPL.</i>				
Documentation provided by CME				
--				
DOE assessment				Date: 03/10/2018
Letter of approval and authorization from host country is pending. CAR is open.				
CME response				Date: 16/04/2019
<i>Host Country Approval letter enclosed</i>				
Documentation provided by CME				
LOA by Indian DNA				
DOE assessment				Date: 24/04/2019
CME has submitted LoA; checked and confirmed by the DOE. CAR is closed.				

CAR ID	04	Section no.	D.2.1	Date: 07/08/2018
Description of CAR				
Under section A.3 of the PoA-DD, CME has not provided a description on the eligibility of LED applicable under the PoA. This is pertinent considering the fact that the methodology applied has delineated several criteria for the technical specification of the eligible LED. While doing so, please refer section K (part II) of the PoA-DD and § 81 (b), § 81 (c) and §120 (d) Standard: CDM project standard for programmes of activities Version 01.0.				
CME response				Date: 07/09/2018
<i>PoA-DD Sections A.3 and H.4 have been revised to address the requirements of § 81 (b), § 81 (c) and §120 (d) Standard: CDM project standard for programmes of activities Version 01.0.</i>				
Documentation provided by CME				
<i>Revised PoA DD, version 02.0</i>				
DOE assessment				Date: 03/10/2018
Review of revised PoA-DD reveals the adherence of the stated requirement; checked and confirmed by the Validation team. CAR is closed.				

CAR ID	05	Section no.	D.2.2.1	Date: 07/08/2018
Description of CAR				
Under part II of the PoA-DD, the listed applicability criteria for the applied methodology is incomplete as it doesn't explain all applicability condition of the methodology, for e.g. the applicability compliance of § 59 of AMS II.C. version 15.0 is missing.				
CME response				Date: 07/09/2018
<i>Applicability compliance stated in § 59 of AMS II.C. version 15.0, has been included in section I.2 of revised PoA-DD.</i>				
Documentation provided by CME				
<i>Revised PoA-DD, version 02.0</i>				

DOE assessment	Date: 03/10/2018
Review of revised PoA-DD reveals the adherence of the stated requirement (i.e. § 59 of AMS II.C. version 15.0) ; checked and confirmed by the Validation team. CAR is closed.	

CAR ID	06	Section no.	D.2.2.7	Date: 07/08/2018
Description of CAR				
As per § 39 of AMS II.C., version 15.0, <i>"If the equipment installed replaces existing equipment, the number and "power" of a representative sample of the replaced equipment shall be recorded in a way that allows for a physical verification by a designated operational entity (DOE)."</i> The compliance of the stated paragraph of the applied methodology is either missing or not transparently explained under section I.7.1, I.7.2 and I.7.3 (part II of the PoA-DD).				
CME response				Date: 07/09/2018
Compliance with § 39 of AMS II.C., version 15.0, has been demonstrated in section I.7 and Section I.7.1 of revised PoA DD.				
Documentation provided by CME				
Revised PoA-DD, version 02.0				
DOE assessment				Date: 03/10/2018
Review of revised PoA-DD reveals the adherence of the stated requirement (i.e. § 59 of AMS II.C. version 15.0) ; checked and confirmed by the Validation team. CAR is closed.				

CAR ID	07	Section no.	D.2.2.7	Date: 07/08/2018
Description of CAR				
As per § 41 of AMS II.C. version 15.0, <i>"monitoring shall include annual checks of a sample of non-metered systems to ensure that they are still operating"</i> . Validation team's review of PoA-DD reveals no such monitoring parameter or plan under section I.7.1, I.7.2 and I.7.3 (part II of the PoA-DD).				
CME response				Date: 07/09/2018
Same has been included in Section I.7.1 of revised PoA-DD.				
Documentation provided by CME				
Revised PoA-DD, version 02.0				
DOE assessment				Date: 03/10/2018
Review of revised PoA-DD reveals the adherence of the stated requirement (i.e. § 41 of AMS II.C. version 15.0) ; checked and confirmed by the Validation team. CAR is closed.				

CAR ID	08	Section no.	D.2.2.7	Date: 07/08/2018
Description of CAR				
The monitoring (under section I.7.1, I.7.2 and I.7.3 -part II of the PoA-DD) does not contain any parameter for the compliance of requirement of § 59 of AMS II.C. version 15.0.				
CME response				Date: 07/09/2018
Monitoring of destruction of replaced bulbs has been included in section I.7.1 of revised PoA-DD.				
Documentation provided by CME				
Revised PoA-DD, version 02.0				
DOE assessment				Date: 03/10/2018
Review of revised PoA-DD reveals the adherence of the stated requirement (i.e. § 59 of AMSII.C. version 15.0) ; checked and confirmed by the Validation team. CAR is closed.				

CAR ID	09	Section no.	D.2.4	Date: 07/08/2018
Description of CAR				
CME is requested to further elaborate the eligibility criteria 4 of the PoD-DD (under section K -part II of the PoA-DD) to provide specification of the technology/measure, such as the level and type of service, as well as performance specification based on, inter alia, testing/certification as per the requirement of §120 (d) Standard: CDM project standard for programmes of activities Version 01.0, while doing so please also refer to foot note 23 and 24 of the stated standard.				

CME response	Date: 07/09/2018
<i>Eligibility criteria no 4 under Section K has been elaborated further.</i>	
Documentation provided by CME	
<i>Revised PoA-DD, version 02.0</i>	
DOE assessment	Date: 03/10/2018
Please refer the stated requirement (i.e. of §120 (d) Standard: CDM project standard for programmes of activities Version 01.0) read with foot note 23 and 24 of the stated standard and do the needful; CAR is open.	
CME response	Date: 12/10/2018
<i>Section K of PoA-DD and Section F of CPA-DD have been revised to address the CAR</i>	
Documentation provided by CME	
<i>Revised PoA DD, version 03.0</i>	
DOE assessment	Date: 12/12/2018
Validation team has checked and confirmed that in the revised PoA-DD, CME has addressed the requirements of §120 (d) of Standard: CDM project standard for programmes of activities Version 01.0) along foot note 23 of the standard. The foot note 24 (i.e. The level of service shall be defined in comparison with the baseline system being replaced) of the standard shall be automatically complied and shall have be reported in the CPA DD in order to demonstrate the project's compliance with the applicability criteria of the methodology. CAR is closed.	

CAR ID	10	Section no.	D.2.4	Date: 07/08/2018
Description of CAR				
CME is requested to define (under section K -part II of the PoA-DD) eligibility criteria on “Conditions to ensure the compliance with other requirements of the applied methodologies” inline with the requirement of §120 (h) Standard: CDM project standard for programmes of activities Version 01.0.				
CME response				Date: 07/09/2018
Section K of PoA-DD has been revised to include eligibility criteria on conditions to ensure compliance with requirements of methodology				
Documentation provided by CME				
Revised PoA-DD, version 02.0				
DOE assessment				Date: 03/10/2018
Review of revised PoA-DD reveals the adherence of the stated requirement (i.e. of §120 (d) Standard: CDM project standard for programmes of activities Version 01.0) ; checked and confirmed by the Validation team. CAR is closed.				

CAR ID	11	Section no.	D.2.4	Date: 07/08/2018
Description of CAR				
CME is requested to re-define the eligibility criteria 11 (under section K -part II of the PoA-DD) in view of the comments raised under monitoring plan.				
CME response				Date: 07/09/2018
Eligibility criteria 11 has been revised				
Documentation provided by CME				
Revised PoA-DD, version 02.0				
DOE assessment				Date: 03/10/2018
Review of revised PoA-DD reveals the adherence of the stated requirement; checked and confirmed by the Validation team. CAR is closed.				

CAR ID	12	Section no.	--	Date: 07/08/2018
Description of CAR				
Affirmation under Appendix 2 of the PoD-DD is missing. Furthermore, the Appendix 3, 4 and 5 have been left as blank, which is not as per the requirement of PoA-DD filling guidelines.				
CME response				Date: 07/09/2018
Appendices 2, 3, 4 and 5 have been revised.				

Documentation provided by CME	
<i>Revised PoA-DD, version 02.0</i>	
DOE assessment	Date: 03/10/2018
Review of revised PoA-DD reveals the fulfilment of adherence of Appendix 2, 3, 4 and 5 of the PoA-DD filling guideline. CAR is closed.	

CAR ID	13	Section No.	--	New finding raised on 18/03/2019
Description of CAR				
"The version of regulatory documents (VVS/PS/PCP) originally applied by the PoA at the time of public consultation (GSC) is obsolete. The latest version of these regulatory documents are version 02.0. CME/PP is requested to adapt the latest/valid regulatory documents."				
CME response				Date: 16/04/2019
<i>The PoA-DD has been revised (in particular Section H.3 of Part II -Generic component project activity) to apply version 02.0 of the regulatory documents.</i>				
Documentation provided by CME				
<i>Revised PoA-DD, version 04</i>				
DOE assessment				Date: 24/04/2019
CME has updated in the PoA-DD on the PS, version 02.0, checked and confirmed by the DOE. Furthermore, the DOE has refereed and considered VVS, version 02.0 in all its findings. CAR is closed.				

CAR ID	14	Section No.	-	New finding raised on 02/05/2019 by TR
Description of CAR				
<p>1.In many sections of the PoA-DD, it is stated that the project implementation will be done in lower income and rural households of India. CME needs to confirm this and how will this be monitored and recorded?</p> <p>2.In section G of the PoA-DD, CME has not provided the details of the LoA.</p> <p>3.Paragraph 51 of the applied methodology provides description on the baseline scenario, however the PoA DD is silent on this in in section I.5.</p> <p>4.CME needs to confirm on the applicability of Paragraph 52 of the applied methodology for net to gross adjustment.</p> <p>5.In the PoA-DD, CME has stated "Survey sample size shall be determined to have at-least 95% confidence level with 10 % maximum margin of error". CME needs to confirm the source of 95% confidence, as the applied methodology requires it as 90%.</p> <p>6.In section I.7 of the PoA-DD, CME needs to clarify which option is going to be applied under Paragraph 53 of the methodology.</p> <p>7.CME needs to confirm the application of the methodology requirement for the monitoring parameter 'Average annual operating hours of the group of i baseline equipment'.</p> <p>As per the applied methodology, "The operating hours of the baseline equipment in year y can be determined using surveys by continuous measurement of usage hours of baseline equipment for a minimum of 90 days. For a large population of baseline equipment: (a) Use a representative sample (sampling determined by a minimum 90% confidence interval and 10% maximum error margin); (b) Apply correction for seasonal variation, if any; and (c) Ensure that sampling is statistically robust and relevant, i.e. the selection of the equipment to be analysed for operating hours has a random distribution and is representative of target population (size, location).</p> <p>For project activities where it can be demonstrated that the operating hours would not vary due to project implementation, for example, fixed scheduling of the operation of water pumps in the baseline</p>				

and in the project, it can be assumed that operating hours during the project are equal to the operating hours in the baseline”.

- 8.CME needs to confirm on the monitoring procedure for “Number and wattage of baseline lamps scrapped”, while doing so please confirm whether it would be based on sampling and how the same would be carried out.
- 9.CME needs to confirm how the sampling frame can be considered homogenous for household and commercial usage of LEDs considering the fact that the usage pattern (hours) will be different in the two cases.
- 10.CME is requested to confirm whether the same sample size calculation formulae applicable for both mean and proportion parameter?
- 11.As per the PoA DD, in each household, 6 LEDs are to be distributed. However, the PoA DD is silent as how the operational rate be determined out of the total population of LEDs distributed.
- 12.The following eligibility criteria is missing as per the SSC General guidelines:
CPA crediting period shall be within the life time of PoA.
- 13.For the eligibility criterion no. 6, CME has stated “Actual photographs of project lamps clearly showing the unique identification mark shall be submitted to validating DOE”.
CME needs to confirm whether photographs for few sample lamps or whole population shall be provided?

Also the compliance of paragraph 45 of the applied methodology is missing under the eligibility criteria.
14. Under eligibility criterion no. 13 it is stated “Each CPA will demonstrate that it is exempt from a debundling check as each subsystem is no more than 1 per cent of the small-scale threshold of 600 MWh energy saved per annum”.

Whereas in section H.3 of th PoA-DD it is stated:

“As each LED bulb to be included in the generic CPA qualifies as a ‘microscale CDM unit’ (energy savings at a scale of no more than 20 GWh per year), the SSC CPAs to be included in the PoA are exempted from debundling check as well as meeting the small scale or microscale threshold throughout the crediting period.”

15. As per Paragraph 23 of Standard for sampling and surveys for CDM project activities and programme of activities, version 07.0 requires the DOE to validate the proposed sample size and sampling method to achieve the minimum confidence/precision requirements. As per the same requirement, the DOE shall be able to reproduce the sample size calculation in order to validate the proposed sample size. However, the PoA DD has not provided any sample size or calculation spread sheet.

CME response

Date: 07/05/2019

1. The CME does not claim to implement the project exclusively in rural households and or low-income groups. However, the low outreach of LED in rural and semi urban areas owing to unawareness and limited availability, makes it more likely that maximum number of ICLs will be found in these areas and hence it is envisaged that the distribution of LEDs under the PoA will take place primarily in rural areas. Similarly, the high upfront cost of LED still poses a challenge for low income households thereby making them most likely target group for the implementation of the PoA. The CME would like to draw DOE's attention towards a report published by Prayas Energy Group , based on a survey of 445 households in rural Pune. According to the

survey 53% of low-income group and 40% of middle-income group used ICL. Though this survey was carried out in Pune, the results won't be very different for rest of rural India. Hence it is CME's assessment that mostly rural India and low-income group households will benefit from this programme. However in order to avoid confusion regarding implementation of the program, the description has been revised to demonstrate its universal outreach.

2. Details of LoA has been added in Section G.

3. the most plausible baseline scenario considered in PoA DD is continued use of ICLs/fluorescent tubes in absence of project activity. Paragraph 51 of methodology also mentions same. Section I.5 has been revised to include reference of paragraph 51.

4. Default net to gross adjustment factor has been added to equation 2 and 8 in the PoA-DD

5. the error has been corrected.

6. Choice of option included in Section I.7 under parameter $n_{i \text{ operational}}$.

7. Clarification SSC_740 on monitoring of average annual operating hours of the group of i baseline lamps is being followed for monitoring the said parameter. While methodology requires surveys by continuous measurement of usage hours of baseline equipment for a minimum of 90 days in a representative sample, Clarification SSC_740 allows this exercise to be undertaken only once either prior to or concurrent with first verification. However, this provision is only for residential premises. Accordingly, for CPAs implementing LEDs in households, requirement of methodology along with guidance provided in the clarification will be applied for monitoring annual operating hours, while for CPAs implementing LEDs in SMEs/commercial spaces, the requirements of methodology shall be followed.

8. Data pertaining to distribution of LED and collection of baseline lamp in exchange, will be collected electronically. Advanced collection systems will be employed making use of multiple mobile digital devices (smart phones and/or tablets) that, soon after collection, will load the captured data (such as consumer utility number, unique identification, address etc.) to a (cloud based) data server for central storage. Amongst others, the following information will be captured and stored in the DMS

- Unique user ID number allotted by DISCOM
- Address with/without GPS coordinates
- Contact details
- Number & wattage of baseline lamps collected
- Number & wattage of LEDs replaced

The collected baseline lamps will be stored in separate boxes according to their wattage. Each box will have suitable labels with information about the type, number and wattage of baseline lamps stored in it. These will then be handed over to entity having contractual agreement with CME for disposal of the lamps. The entity will transport the baseline lamps from dispatch centre to destruction facility. It shall record and document the proof of destruction which shall be submitted to CME on demand. Same has been reported in PoA DD Sections- I.7 and I.7.1

9. Sampling frame for domestic and commercial usage shall be exclusive from one other. Individual CPAs shall demonstrate the sampling frame based on target population and accordingly calculate sample size, general guidelines of which has been presented in the PoA-DD.

10. Sample size calculation formula for mean and proportional parameters will be followed in accordance with Guidelines on sampling and surveys for CDM project activities and programme of activities; version 04.

11. According to PoA and requirement of methodology, a maximum of 6 LEDs can be provided to a single recipient who can be unambiguously identified through a combination of information such as unique consumer code provided by the DISCOM, address, contact details etc. Using random number generators, the

recipient will be randomly chosen.

12. the criteria has been added to point no 5.

13. photographs of a sample of lamps shall be provided to the DOE. This clarity has been added to the eligibility criterion.

Compliance with paragraph 45 of the methodology has been stated under criterion no 4.

14. Eligibility criterion no 13 has been revised to conform with paragraph 124 (n) of CDM standard for programme of activities; version 02.0

15. Sample size calculation will be described in specific case CPA DDs as population size will vary from one CPA to another. However adherence to paragraph 13 of 'Standard for sampling and surveys for CDM project activities and programmes of activities' enumerating the requirement of minimum sample size in case of mean and proportion parameters has been added in section I.7.2 of PoA DD.

Documentation provided by CME

Revised PoA DD

DOE assessment

Date: 14/05/2019

CME has either addressed the finding in the revised PoA DD or clarified in the response above, which is deemed acceptable to the validation team; checked and confirmed by the validation team; CAR is closed.

CAR ID	15	Section no.	UNFCCC I & R comments	Date: 22/07/2019
Description of CAR				
The SSC-CPA shall fulfil the requirement for auto additionality of CPAs under small scale PoA in line with Paragraph 15 of AMS-II.C ver. 15 (PoA-DD page 40). However, the provisions under paragraph 15 were valid upto 27/11/2017 whereas the PoA start date is 24/04/18. The DOE shall provide information how it considered compliance with Paragraph 15 of AMS-II.C ver. 15.				
CME is requested to address the above I & R comment by UNFCCC while doing so please note that the template used for the PoA DD is now obsolete and thus no more valid for use.				
CME response				Date: 23/07/2019
Section C of the PoA DD has been revised to include barrier analysis for demonstrating additionality				
Version 9 of Template has been used.				
Documentation provided by CME				
PoA DD version 07				
Template Investment Analysis Spread sheet				
DOE assessment				Date: 24/07/2019
Based on I & R comment received from UNFCCC, CME has removed reference of Paragraph 15 of AMS-II.C ver. 15 to demonstrate additionality.				
The generic CPA of the PoA is small-scale in accordance with the thresholds referred to in paragraph 126 PS for PoAs (version 02.0) and applies only small-scale methodology. The section C and K of the PoA DD has been revised to include additionality based on financial barrier, which include conditions that would systematically demonstrate additionality of CPAs under the proposed CDM PoA in the eligibility criteria for inclusion of CPAs in the PoA. In the opinion of validation team based on revised POA DD and Template Investment Analysis Spread sheet, the description/generic information provided in the PoA DD is sufficient to demonstrate additionality of the potential CPAs of the PoA DD. The criteria is inline with the requirements of tool 21-“Demonstration of additionality of small -scale project activities; Version 12.0 read with‘ Tool for the demonstration and assessment of additionality’; version 07.0.				
Furthermore, in the revised submission CME has opted the latest version (i.e. version 09.0) of the PoA DD.				
Based on assessment above, CAR is closed.				

Table 3. FARs from this validation

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

Appendix 5.PoA Validation Protocol

Table 1: CDM-POA-DD Requirements Checklist ((based on § 37 of the CDM Modalities and Procedures and on VVS , Project Standard and Project Cycle Procedure)				
Checklist	Comment	Ref.	Draft Conclusion	Final Conclusion
PART I. Programme of activities (PoA)				
SECTION A. General description of PoA				
A.1. Title of the PoA				
A.1.1.Are title, version number and the date of completion of PoA-DD given in section A.1 of the PoA-DD?	Yes, the validation team during document review of the PoA-DD and PoA-DD template compared the two documents and further verified from UNFCCC website to confirm that the project title, current version number and the date of the PoA-DD has been provided correctly in the section A.1 of the PoA-DD.	/01/, /B04/	OK	OK
A.2. Description of the PoA				
A.2.1. Has PoA-DD in section A.2 contains the description of the policy/measure or stated goal that the PoA seeks to promote in a transparent manner with sufficient reference of the policy/measure/stated goal if any?	Yes, the information provided in section A.2 of the PoA-DD appropriately and transparently describes the policy/measure or stated goal that the PoA seeks to promote. CAR-01 & CAR-04 have been raised.	/1/	CAR-01 & CAR-04	OK
A.2.2. Has PoA-DD in section A.2 contains a sufficient description of Framework for the implementation of the proposed PoA.?	Yes, the information contained provides a sufficient description of the framework for the implementation of the proposed PoA.	/1/	OK	OK
A.2.3.Has a confirmation been given that the proposed PoA is a voluntary action by the coordinating/managing entity?	Yes, the CME has provided confirmation along with valid evidence along with valid evidence ^{/04/} that the proposed PoA is a voluntary action.	/1/	OK	OK

A.2.4. Does the PoA-DD in section A.2 contains a brief description of how the proposed PoA contributes to sustainable development	The description of how the project contributes to the sustainable development of the host country of India has not been appropriately described.	/1/, /17/	OK	OK
A.2.5. Does the project qualify as a small scale CDM project activity as defined in decision 4 / CMP.1 annex II?	Yes	-	-	-
A.2.6. Has the latest version of the CDM-POA-DD form been applied?	Yes, the latest version of the CDM-PoA-DD-FORM has been used for drafting the PoA-DD.	/1/, /B04/	OK	OK
A.2.7. Has the CDM-POA-DD been duly filled in accordance with the latest guidance(s) and procedures and all information are consistently described?	Yes	/1/, /B04/	OK	OK
A.2.8. Does the PoA-DD contains information that the CME wish to treat as confidential /proprietary? Has the proprietary information been provided in two different versions and considered as per CCIPL's procedures	No, the PoA-DD does not contain information that the CME wish to treat as confidential or proprietary.	/01/	OK	OK
A.3. CME and Participants of PoA and				
A.3.1 Has the CME and all project participants been listed in section A.3 of the PoA-DD? Note: The CME of the proposed PoA, as the entity which communicates with the Board; Project participants to the PoA (project participants may or may not be involved in one of the component project activities (CPAs) related to the PoA).	Yes, the validation team reviewed the PoA-DD and found that the section A.3 has listed the CME and PPs.	/1/	OK	OK
A.4 Party(ies)				
A.4.1.1 Have all host countries been correctly listed?	Yes, the current PoA only involves country of India, which is the host party and correctly listed in this section.	/1/	OK	OK
A.4.1.2 Is there any Party directly involved as project participant, and if yes, is that Party's contact details included in annex 1 of the PoA-DD?	N/A	/1/	OK	OK
A.4.1.3 Has the coordinating/managing entity obtained letters of approval for the implementation of the PoA from each Host Party and Annex I Party involved in the PoA?	Letter of Approval from the host party DNA is pending. CAR 03 was raised.	/1/	CAR 03	OK

<i>Note: Letters of approval shall be issued in accordance with the guidance provided by the CDM Executive Board (EB16, Annex 6).</i>				
A.4.2. Do the written approvals confirm that the corresponding party is a Party to the Kyoto Protocol?	Subject to submission of LoA and closure of CAR 03.	/1/	CAR-03	OK
A.4.3. Are the approvals issued from organizations listed as DNAs on the UNFCCC CDM website? Indicate the means of validation employed to assess the authenticity, i.e. in case of doubt whether LoA has been verified with the DNA. Further describe which entity submitted the LoA for validation.	Subject to submission of LoA and closure of CAR 03.	/1/	CAR-03	OK
A.4.4. Do the written approvals confirm that the participation is voluntary?	Subject to submission of LoA and closure of CAR 03.	/1/	CAR-03	OK
A.4.5. Does the written approval from the host country confirm that the project contributes to the sustainable development in the /PoA-DD/country?	Subject to submission of LoA and closure of CAR 03.	/1/	CAR-03	OK
A.4.6. Do the written approvals refer to the precise project title in the PoA-DD submitted for registration or an additional specification of the project activity, e.g. PoA-DD version number?	Subject to submission of LoA and closure of CAR 03.	/1/	CAR-03	OK
A.4.7. Are the written approvals unconditional with regard to A.3.2, A.3.4 to A.3.6?	Subject to submission of LoA and closure of CAR 03.	/1/	CAR-03	OK
A.4.8. Has the coordinating/managing entity obtained letters of authorization of its coordination of the PoA from each Host Party? <i>The authorizations for the coordination of the PoA can be granted vide the letters of approval from each Host Party.</i>	Subject to submission of LoA and closure of CAR 03.	/1/	CAR-03	OK
A.4.9. Is the information regarding the project participants listed in section A3 and in Annex 1 of the PoA-DD internally consistent to each other?	Yes, the information regarding the project participants listed in section A.3 and in Annex 1 of the PoA-DD is internally consistent to each other.	/01/	OK	
A.4.10. Has the participation to the PoA of each project participant listed in the PoA-DD been approved by at least one Party involved? <i>Indicate whether the participation of the project participant(s) has been approved by a Party to the Kyoto Protocol. Describe the means of validation employed to draw this conclusion.</i>	Subject to submission of LoA and closure of CAR 03.	/1/	CAR-03	OK
A.4.11. Are there any other project participants approved but not listed in the PoA-DD?	N/A	/1/	-	-

A.5 Location of PoA				
A.5.1. Has the location (in terms of a geographical area for e.g. municipality, region within a country, country or several countries within which all CPAs to be included of the PoA been correctly described?	Yes, the validation team confirms that the host country (India) is listed in section A.5 of the webhosted PoA-DD as the location of the PoA.	/1/	OK	OK
A.5.2 Does the CDM-PoA-DD include a definition of the boundary for the PoA in terms of a geographical area (e.g., municipality, region within a country, country or several countries) within which all CPAs included in the PoA will be implemented?	Yes, the validation team confirms that PoA-DD has included the national boundary of India within all future CPAs shall be implemented.	/1/	OK	OK
A.5.3 Are all applicable national and/or sectoral policies and regulations within that chosen boundary reflected in the determination of the baseline?	Yes, the validation team confirms that all applicable national and/or sectoral policies and regulations within that chosen boundary reflected in the determination of baseline	/1/	OK	OK
A.6. Technologies/measures of the PoA				
A.6.1 Does the PoA-DD contain a clear, accurate and complete description of the CPAs with regard to the technology / measures to be used?	The PoA-DD contains a clear, accurate and complete description of the CPAs with regard to the technology / measures to be used.	/1/	OK	OK
A.6.2 Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	Yes, the project is saving fossil fuel based power generation due to energy efficient lighting technology. The technology results in a significantly better environmental performance and contributes more to sustainability than any commonly used technologies in the host country.	/1/	OK	OK
A.7. Public funding of PoA				
A.7.1 Is the PoA involves public funding?	Yes, the validation team reviewed the PoA-DD and Declaration on public funding/ and confirms that PoA does not involve diversion of public funding from Annex-I parties.	/1/, /5/	OK	OK
A.7.2 Is there a confirmation that official development assistance has not been diverted to the implementation of the PoA in case public funding is used?	Yes, in the form of Declaration on public funding it is evident that official development assistance has not been diverted to the implementation of the PoA.	/1/, /5/	OK	OK
SECTION B. Demonstration of additionality and development of eligibility criteria				
B.1. Demonstration of additionality for PoA				

B.1.1 Has it been demonstrated by the CME that describe how in the absence of CDM, none of the implemented CPAs would occur.	Yes. CME has demonstrated additionality of the PoA in line with "Standard- CDM Project Standard for Programme of Activities", version 02.0.	/1/, /B01/	CAR-15	OK
B.2. Eligibility criteria for inclusion of a CPA in the PoA				
B.2.1. Has the eligibility criteria for inclusion of a CPA under the PoA included in the PoA-DD as per "Standard- CDM Project Standard for Programme of Activities", version 01.0. Note: Validation team based on its expertise in the sectoral scope and any PoA specific requirement can confirm the requirement of any other eligibility criteria. Please provided assessment for each of the eligibility criteria, the eligibility criteria shall cover as a minimum the following :	Subject to closure of CL 03 and CL 04.	/1/, /B01/	CAR-09 CAR-10 CAR-11	OK
(a)The geographical boundary of the CPA including any time-induced boundary # consistent with the geographical boundary set in the PoA. # For example, an emission factor for electricity generation is dependent on the boundaries of regional or state or sub-regional grids.	The geographical boundary of the POA is India and has been clearly defined in the eligibility criteria.	/1/, /B01/	OK	
(b) Conditions that avoid double counting of emission reductions like unique identifications of product and end-user locations (e.g. programme logo);	Conditions to avoid double counting have been clearly defined in the eligibility criteria.	/1/, /B01/	OK	
(c) The specifications of technology/measure # including the level * and type of service, performance specifications including compliance with testing/certifications; # Specifications of the technology/measure shall include the type, capacity and other key features of the design of the systems. For example, indicating the installed capacity (in kW), size or dimensions, fixed/portable operation, and other key design features that makes the project cook stoves efficient, would be appropriate; however, only indicating that all cook stoves will have an efficiency X% would not be sufficient. * The level of service shall be defined in comparison with the baseline system being replaced.	The specifications of technology/measure have been clearly defined in the eligibility criteria.	/1/, /B01/	CAR-09	OK

(d) Conditions to check the start date of the CPA through documentary evidence;	Conditions to check the start date of the CPA through documentary evidence has been clearly defined in the eligibility criteria.	/1/, /B01/	OK	
(e) Conditions that ensure compliance with applicability and other requirements of single or multiple methodologies applied by CPAs;	Conditions to ensure meth applicability compliance have been clearly defined in the eligibility criteria.	/1/, /B01/	CAR-10	OK
(f) The conditions that ensure that the CPA meets the requirements pertaining to the demonstration of additionality as assessed in section B.1 above;	The additionality requirements have been clearly defined in the eligibility criteria.	/1/, /B01/	CL-01 CAR-15	OK
(g) The PoA-specific requirements stipulated by the CME including any conditions related to undertaking local stakeholder consultations and environmental impact analysis;#	The PoA specific requirements like LSH consultations and EIA have been clearly defined in the eligibility criteria.	/1/, /B01/	OK	
# See also relevant paragraphs of “CDM project cycle procedure”.				
(h) Conditions to provide an affirmation that funding from Annex I Parties, if any, does not result in a diversion of official development assistance;	The criterion for non diversion of ODA funding from Annex 1 party has been clearly defined in the eligibility criteria.	/1/, /B01/	OK	
(i) Where applicable, target group (e.g. domestic/commercial/industrial, rural/urban, grid-connected/off-grid) and distribution mechanisms (e.g. direct installation) \$;	Target groups have been clearly defined in the eligibility criteria.	/1/, /B01/	OK	
\$ This is to re-test the validity of assumptions made at the PoA level. For example, in a lighting efficiency application, lighting usage hours of 3.5 hours per day would be valid if the target group is residences/households. Usage hours would be different in commercial applications and vice versa.				
(j) Where applicable, the conditions related to sampling requirements for the PoA in accordance with the “Standard for sampling and surveys for CDM project activities and programme of activities”;	Sampling is required.	/1/, /B01/	CAR-11	OK
(k) Where applicable, the conditions that ensure that every CPA meets the small- scale or microscale threshold # and remains within those thresholds throughout the crediting period of the CPA. However, for a CPA that consists of only units that qualify as ‘microscale CDM units’ as defined in the methodological tool “Demonstration of additionality of microscale project activities”, this condition is not required;	Micro scale or small scale threshold criteria has been clearly defined in the eligibility criteria.	/1/, /B01/	OK	

# Please refer to the latest approved version of the Standard- CDM Project Standard for Programme of Activities”				
(l) Where applicable, the requirements for the debundling check, in case the CPA belongs to small-scale or microscale project categories #. However, if a CPA solely consists of ‘microscale CDM units’, the requirement regarding debundling is not applicable.	Debundling criteria has been clearly defined in the eligibility criteria.	/1/, /B01/	OK	OK
# Please refer to the latest approved version of Standard- CDM Project Standard for Programme of Activities”				
B.3. Application of methodologies				
B.3.1 Does the PoA-DD contains description of the technology/measures and indicated the methodology chosen?	The validation team reviewed the PoA-DD and confirms that description of the technologies/measures as appropriate and in conformance with the requirements of the PoA-DD form filling guidelines.	/1/, /B02/	OK	OK
B.3.2 In cases of multiple technologies/measures or multiple methodologies are being applied, does the PoA-DD list all the combinations of technologies/measures and methodologies that will be used in the PoA?	N/A	/1/	NA	NA
B.3.3 In case of sampling plan(If applicable), does the PoA-DD provide a description to demonstrate how it meets applicable provisions in the Standard for sampling and surveys for CDM project activities and programme of activities.	Yes, subject to closure of CAR-06, CAR-07 and CAR-08	/1/	OK	OK
SECTION C. Management system				
C.1 Does the PoA-DD contains the description of the CME’s management system in line with Standard- CDM Project Standard for Programme of Activities”?	Yes, the description of management system provided by CME in section C of the PoA-DD is appropriate and complete in regards to the requirements of latest version of the project standard.	/1/, /B01/	OK	OK
SECTION D. Duration of PoA				
D.1. Starting Date of the PoA				
D.1.1. What is the starting date of the PoA? Is it Reasonable and does the PoA-DD provides how the start date was determined?	Subject to closure of CAR-02	/1/, /B01/,	CAR-02	OK
D.2. Length of the PoA	The validation team confirms that the	/01/,,	OK	OK

<i>The length of the PoA shall be assessed</i>	length of the PoA, as mentioned in section D.2 of the webhosted PoA-DD ^{02/} , is 28 years and in conformance with the requirements stipulated in CDM PS version 02.0/ ^{B01b/} .	/B01b/		
D.2.1. What is the length/lifetime of the PoA? Is it reasonable? <i>PoA duration should not exceeding 28 years (60 years for A/R)</i>	The validation team confirms that the length of the PoA, as mentioned in section D.2 of the webhosted PoA-DD is 28 years and deemed to be reasonable. This is and in conformance with the requirements stipulated in CDM PS version 02.0.	/1/, /B01-b/	OK	OK
E. Environmental Analysis				
E.1. Level of Analysis <i>The analysis shall be carried out either on PoA or CPA level</i>				
E.1.1.Has it been clearly indicated on which level i.e. PoA or CPA an environmental Analysis has been carried out or will be carried out?	Yes, it has been clearly stated in section E of the PoA-DD that the environmental analysis is done at PoA level. The validation team deems it to be appropriate and in conformance with the requirements of the CDM PS, Version 02.0.	/1/, /B01-b/	OK	OK
E.2. Documentation on the analysis of the environmental impacts				
C.2.1. Has an environmental analysis of the PoA as per requirements of the CDM modalities and procedures been undertaken and described in the CDM-POA-DD?	Refer to comments in section E.1	/1/, /B01-b/	OK	OK
E.3 Environmental impact Analysis Requirements				
E.3.1. Are there any Host Party requirements for an Environmental Impact Assessment (EIA)?	Refer to comments in section E.1	/1/, /B01-b/	OK	OK
E.3.2. In case an Environmental Impact Assessment (EIA) is requested by the host party, has it been carried out and if applicable duly approved?	Refer to comments in section E.1	/1/, /B01-b/	OK	OK
E.3.3. Are trans boundary environmental impacts considered in the analysis?	Refer to comments in section E.1	/1/, /B01-b/	OK	OK
F. Stakeholders' comments				

F.1. Level of Analysis				
F.1.1. Has it been clearly indicated on which level i.e. PoA or CPA stakeholder comments have been or will be invited?	Yes, it has been clearly stated in section E of the PoA-DD that the local stakeholder consultation has been at PoA level. The validation team deems it to be appropriate and in conformance with the requirements of the CDM PS, Version 02.0.	/1/,/09/, /B01-b/	OK	OK
F.2. Brief description how comments by local stakeholders have been invited and compiled.				
F.2.1. With regard to the PoA, how have local stakeholders' comments been invited prior to the publication of the PDDs and summarized? If applicable, was due account taken of the comments received?	Yes the local stakeholders' comments been invited prior to the publication of the PDDs	/1/,/09/, /B01-b/	OK	OK
F.3. Summary of the comments received				
F.3.1. With regard to the PoA, can the summary provided assessed as adequate?	Yes	/1/,/09/, /B01-b/	OK	OK
F.4. Report on how due account was taken of comments received				
F.4.1. With regard to the PoA, can the report provided assessed as adequate?	Yes	/1/,/09/, /B01-b/	OK	OK
F.4.2. With regard to the PoA, can the local stakeholder consultation process in general be assessed as adequate?	Yes	/1/,/09/, /B01-b/	OK	OK
SECTION G. Approval and authorization				
G.1 Does the PoA-DD indicates and included the letter(s) of approval from Party (ies) which wishes to be involved in the PoA, and whether it is available at the time of submitting the PoA-DD to the validating DOE. Note: CME letters of authorization of its coordination of the PoA from each Party shall also been included.	Subject to submission of LoA and closure of CAR 03.	/1/	CAR-03	OK
PART II. Generic component project activity (CPA)				
A.1. Purpose and general description of generic CPAs				
A.1.1 Has PoA-DD in section A.1 contains the description of the description of each generic CPA within the PoA?	There is only one technology/measure in the PoA. PP has provided a separate generic CPA-DD for each of the proposed technology/measure in the PoA, in	/1/	OK	OK

	accordance with the requirements of CDM Project Standard, Version 02.0.			
SECTION B. Application of a baseline and monitoring methodology				
B.1.1. Does the PoA apply an approved and applicable CDM methodology and a valid version thereof?	Yes, the validation team confirms that the PoA-DD refers to an approved and valid version of the applicable CDM methodologies.	/1/, /B02/	OK	OK
B.1.2. Does the typical CPA apply one of the approved small scale categories and any methodology and tool referred therein?	Yes	/1/, /B02/	OK	OK
B.2. Justification of the choice of the methodology				
B.2.1. Is the justification of the choice of an approved baseline and monitoring methodology for the typical CPA sufficient?	Yes, the justification of the choice of an approved baseline and monitoring methodologies for the typical CPA is found to be sufficient.	/1/, /B02/	OK	OK
B.2.2. Does a typical CPA apply a combination of approved methodologies? If so, has such combination been approved only once in accordance with "Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities", version 04.	N/A	/1/, /B02/	NA	OK
B.2.3. Are all applicability criteria in the methodology, the applied tools or any other methodology component referred to therein fulfilled? Has the CME Justified the choice of the selected methodology (ies) by showing that each generic CPA meets each applicability condition of the methodology (ies)? Does documentation that has been used as a basis of justification provided or referenced in the PoA-DD. If applicable, does the PoA-DD provide a general description of the sampling plan?	Yes, all applicability criteria in the methodology, the applied tools or any other methodology component referred to therein are fulfilled. The CME has appropriately justified the choice of the selected methodologies by showing that each generic CPA meets each applicability condition of the methodology. The documentation that has been used as a basis of justification has been referenced in the PoA-DD. CAR-05 has been raised.	/1/, /B02/	CAR-05	OK
B.3. Description of the sources and gases included in the boundary				
B.3.1. Are the CPA's spatial boundaries (geographical) of the CPAs to be included are clearly defined?	Yes, geographical special boundaries of the CPAs to be included are clearly defined.	/1/, /B02/	OK	OK
B.3.2. Are all sources and GHGs included in the project boundary as required in the applied methodology?	Yes, all sources and GHGs included in the project boundary are as	/1/, /B02/	OK	OK

	required in the applied methodologies.			
B.3.3. In case the methodology allows to choose whether a source and/or gas is to be included, is the choice sufficiently explained and justified?	Yes	/1/	OK	OK
B.4. Description of how the baseline scenario is identified and description of baseline scenario				
<i>The description shall be assessed</i>				
B.4.1. Does the PoA-DD make provisions to identify possible baseline scenarios to be considered for CPAs?	Yes, the baseline scenario has been demonstrated in conformance with the appropriate requirements of the applied methodology.	/1/, /B02/	OK	OK
B.4.2. Does the PoA-DD make provisions to identify the list of all the alternatives? Is the list of alternatives complete?	NA	/1/	OK	OK
B.4.3. Does the PoA-DD make provisions to identify the baseline scenario for each CPA?	NA	/1/	OK	OK
B.4.4. Does the PoA-DD make provisions to identify the baseline scenario according to the methodology for each CPA?	NA	/1/	OK	OK
B.4.5. Does the PoA-DD make provisions that any plausible alternative scenario is not excluded?	NA	/1/	OK	OK
B.4.6. Does the baseline alternatives sufficiently take into account relevant national and/or sectoral policies?	NA	/1/	OK	OK
B.4.7. Are the provisions for the baseline scenario determination compatible with the available data and are all literature and sources clearly referenced?	NA	/1/	OK	OK
B.5. CPA additionality				
B.5.1. Assessment and demonstration of CPA additionality	Subject to closure of CL 01.	/1/, /B01/	CL-01	OK
B.5.1.1. Does the PoA-DD makes provisions to describe the additionality demonstration approach for each generic CPA to meet the eligibility criteria of the PoA including confirmation of additionality of the generic CPA for its inclusion into the PoA. Does the demonstration follows the requirements of the applied methodology and/or other methodological tools? Note: Refer to “Standard for demonstration of additionality, development of eligibility criteria and application of multiple	Subject to closure of CL 01.	/1/, /B01/	CL-01	OK

methodologies for programme of activities, for additionality requirement for the PoA. In case of PoA of having small scale CPAs, the demonstration compliance shall be checked against the requirement of attachment A to appendix B. For PoAs utilizing large scale methodology, additionality tool shall be referred.				
B.5.1.2. Which criteria have been established to assess the additionality of CPA under this PoA?	Subject to closure of CL 01.	/1/ /B01/	CL 01	OK
Investment Analysis				
B.5.1.3. Does the PoA-DD provide criteria to assess that the proposed CPA of the PoA would not be the most economically or financially attractive alternative or economically / financially feasible without the revenues from the sale of CERs?	NA	/1/	OK	OK
B.5.1.4. Is the type of investment analysis selected correctly?	NA	/1/	OK	OK
B.5.1.5. Is the selected financial indicator chosen and applied correctly, if applicable?	NA	/1/	OK	OK
B.5.1.6. If applicable, were the input values used in the investment analysis valid and applicable at the time of the investment decision and justified?	NA	/1/	OK	OK
B.5.1.7. If CME proposes to use values from Feasibility Study Reports (FSR) is it possible to verify that the period between the FSR date and investment decision was reasonably short and FSR values did not change materially?	NA	/1/	OK	OK
B.5.1.8. Is it reasonable to assume that no investment would be made at a rate of return lower than the benchmark by, for example, assessing previous investment decisions by the project participants or some verifiable circumstances that have led to a change in the benchmark?	NA	/1/	OK	OK
B.5.1.9. Is the Investment Analysis prepared in compliance with the latest version of the "Guidance on the Assessment of Investment Analysis" as provided by the CDM EB?	NA	/1/	OK	OK
Barrier Analysis				
B.5.1.10. If applicable, are there any issues addressed in the barrier analysis that have a clear impact on the financial viability of the project activity and that shall be assessed by an investment analysis?	NA	/1/	OK	OK
B.5.1.11. If applicable, Do the listed barriers exist and is their existence substantiated? Note: (a) by independent sources of data such as relevant national legislation, surveys of local conditions and national or	NA	/1/	OK	OK

international statistics and/or (b) by interviews with relevant individuals: including members of industry associations, government officials or local experts if necessary?				
B.5.1.12 Would any of the identified barriers prevent the implementation of the project activity but not equally prevent the implementation of the possible alternatives, in particular the implementation of the identified baseline scenario?	NA	/1/	OK	OK
Common Practice Analysis				
B.5.1.13. Are the geographical boundaries for the common practice analysis identified correctly?	NA	/1/	OK	OK
B.5.1.14. Does the PoA-DD provides an explanation why this region was selected and deemed more appropriate and is this explanation traceable and reliable?	NA	/1/	OK	OK
B.5.1.15 Are there similar operational project activities, other than CDM activities, “widely observed and commonly carried out” in the defined region? Note: Use official sources and local and industry expertise?	NA	/1/	OK	OK
B.5.1.16. In case there are similar commercially operated project activities, other than CDM activities, already “widely observed and commonly carried out” in the defined region, are there essential distinctions between the CDM project activity and the other similar activities?	NA	/1/	OK	OK
B.6. Estimation of Emission Reductions of CPA				
B.6.1. Explanation of methodological choices				
B.6.1.1. In case the methodology allows for different methodological choices, are the equations applied properly justified and have they been used reflecting the other methodological choices (i.e. baseline identification)?	yes	/1/, /B02/	OK	OK
B.6.2. Equations, including fixed parametric values used for ER calculation				
B.6.2.1. Are the equations applied correctly according to the applied approved methodology?	Yes, the validation team reviewed the PoA-DD and after comparing it with the applied methodologies confirms that the equations provided in section B.6.1 have been appropriately applied and in conformation with the applied methodologies.	/01/, /B02/	OK	OK
B.6.2.2. Have conservative assumptions been used when calculating the project emissions?	Yes, the validation team confirms that conservative assumptions been used	/1/, /B02/	OK	OK

	to calculate project emissions, as applicable.																					
B.6.3. Data and parameters to be reported in the CPA-DD form																						
B.6.3.1. Are provisions made to identify all data and parameters which remain fixed throughout the crediting period correct, applicable to the project and will lead to a conservative estimation of emission reductions?	Yes, all data and parameters, which remain fixed throughout the crediting period have been identified in this section.	/1/ /B02/	OK	OK																		
B.6.3.2. Is the list of parameters presented in section I.6.2 (Part II of PoA-DD) considered to be complete with regards to the requirements of the applied methodology? <i>P.S.: Provide assessment for each of the ex-ante parameters below using separate rows.</i>	Yes, the PoA-DD mentions reasonable values for all ex-ante calculation / monitoring parameters.	/1/ /B02/	OK	OK																		
B.6.3.2.1. Parameter: CO ₂ emission factor for displacement of electricity in the grid serving the consumers that participate in the SSC-CPA during the monitoring interval y, calculated according to the latest approved version of AMS-I.D (tCO ₂ /MWh)	<table border="1"> <tr> <td>Monitoring Checklist</td><td>Yes / No / NA</td></tr> <tr> <td>Title and description in line with methodology?</td><td>N/A</td></tr> <tr> <td>Data unit correctly stated?</td><td>Yes</td></tr> <tr> <td>Source clearly referenced?</td><td>Yes</td></tr> <tr> <td>Correct value provided for estimation?</td><td>N/A</td></tr> <tr> <td>Has this value been verified?</td><td>NA</td></tr> <tr> <td>Measurement method and procedure correctly described?</td><td>N/A</td></tr> <tr> <td>Purpose of data correctly described</td><td>Yes</td></tr> <tr> <td>Additional comments (if any)</td><td>N/A</td></tr> </table>	Monitoring Checklist	Yes / No / NA	Title and description in line with methodology?	N/A	Data unit correctly stated?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	N/A	Has this value been verified?	NA	Measurement method and procedure correctly described?	N/A	Purpose of data correctly described	Yes	Additional comments (if any)	N/A	/1/	Ok	
Monitoring Checklist	Yes / No / NA																					
Title and description in line with methodology?	N/A																					
Data unit correctly stated?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided for estimation?	N/A																					
Has this value been verified?	NA																					
Measurement method and procedure correctly described?	N/A																					
Purpose of data correctly described	Yes																					
Additional comments (if any)	N/A																					
B.6.3.2.2. Parameter: rated average operating hours for LED		/1/	Ok	Ok																		

type <i>i</i>	Monitoring Checklist	Yes / No / NA			
	Title and description in line with methodology?	N/A			
	Data unit correctly stated?	N/A			
	Source clearly referenced?	N/A			
	Correct value provided for estimation?	N/A			
	Has this value been verified?	N/A			
	Measurement method and procedure correctly described?	N/A			
	Purpose of data correctly described	N/A			
	Additional comments (if any)	N/A			
B.7. Application of the monitoring methodology and description of the monitoring plan					
B.7.1. Data and parameters to be monitored by each CPA					
B.7.1.1. Has the PoA-DD contains monitoring parameters for the CPAs? Are the means of monitoring of all parameters contained in the monitoring plan feasible and in accordance with the requirements of the applied methodology?	Yes, in this section all monitoring parameters have been included as per the requirements of the methodology. CAR-06, CAR-07 and CAR-08 have been raised.	/1/, /B02/	CAR-06, CAR-07 and CAR-08	OK	
B.7.1.2. Is the list of parameters presented in section I.7.1 (Part II of PoA-DD) considered to be complete with regards to the requirements of the applied methodology? <i>P.S.: Provide assessment for each of the ex-post parameters below using separate rows.</i>	Refer to section B.7.1.1.	/01/, /B02/	CAR-06, CAR-07 and CAR-08	OK	
Parameter: n_i baseline Number of pieces of group 'i' baseline lamps replaced.	Monitoring	Yes / No /	/1/	CAR-06, CAR-07 and CAR-08	OK

	Checklist	NA			
	Title and description in line with methodology?	Yes			
	Data unit correctly stated?	Yes			
	Source clearly referenced?	Yes			
	Correct value provided for estimation?	N/A			
	Has this value been verified?	N/A			
	Measurement method and procedure correctly described?	N/A			
	Purpose of data correctly described	Yes			
	Additional comments (if any)	Yes			
Parameter: ni baseline scrapped: Number of pieces of group 'i' baseline lamps destroyed	Monitoring Checklist	Yes / No / NA	/1/	CAR-06, CAR-07 and CAR-08	OK
	Title and description in line with methodology?	Yes			
	Data unit correctly stated?	Yes			
	Source clearly referenced?	Yes			
	Correct value provided for estimation?	N/A			
	Has this value been verified?	N/A			
	Measurement method and	N/A			

	<table border="1"> <tr> <td>procedure correctly described?</td><td></td></tr> <tr> <td>Purpose of data correctly described</td><td>Yes</td></tr> <tr> <td>Additional comments (if any)</td><td>Yes</td></tr> </table>	procedure correctly described?		Purpose of data correctly described	Yes	Additional comments (if any)	Yes															
procedure correctly described?																						
Purpose of data correctly described	Yes																					
Additional comments (if any)	Yes																					
$\rho_{i \text{ baseline}}$ Rated power of group of " i " baseline lamps replaced	<table border="1"> <tr> <td>Monitoring Checklist</td><td>Yes / No / NA</td></tr> <tr> <td>Title and description in line with methodology?</td><td>Yes</td></tr> <tr> <td>Data unit correctly stated?</td><td>Yes</td></tr> <tr> <td>Source clearly referenced?</td><td>Yes</td></tr> <tr> <td>Correct value provided for estimation?</td><td>N/A</td></tr> <tr> <td>Has this value been verified?</td><td>N/A</td></tr> <tr> <td>Measurement method and procedure correctly described?</td><td>N/A</td></tr> <tr> <td>Purpose of data correctly described</td><td>Yes</td></tr> <tr> <td>Additional comments (if any)</td><td>Yes</td></tr> </table>	Monitoring Checklist	Yes / No / NA	Title and description in line with methodology?	Yes	Data unit correctly stated?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	N/A	Has this value been verified?	N/A	Measurement method and procedure correctly described?	N/A	Purpose of data correctly described	Yes	Additional comments (if any)	Yes	/1/	CAR-06, CAR-07 and CAR-08	OK
Monitoring Checklist	Yes / No / NA																					
Title and description in line with methodology?	Yes																					
Data unit correctly stated?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided for estimation?	N/A																					
Has this value been verified?	N/A																					
Measurement method and procedure correctly described?	N/A																					
Purpose of data correctly described	Yes																					
Additional comments (if any)	Yes																					
$n_{i \text{ project}}$ Number of group i project devices distributed under the CPA	<table border="1"> <tr> <td>Monitoring Checklist</td><td>Yes / No / NA</td></tr> <tr> <td>Title and description in line with methodology?</td><td>Yes</td></tr> <tr> <td>Data unit correctly</td><td>Yes</td></tr> </table>	Monitoring Checklist	Yes / No / NA	Title and description in line with methodology?	Yes	Data unit correctly	Yes	/1/	CAR-06, CAR-07 and CAR-08	OK												
Monitoring Checklist	Yes / No / NA																					
Title and description in line with methodology?	Yes																					
Data unit correctly	Yes																					

	stated?				
	Source clearly referenced?	Yes			
	Correct value provided for estimation?	N/A			
	Has this value been verified?	N/A			
	Measurement method and procedure correctly described?	N/A			
	Purpose of data correctly described	Yes			
	Additional comments (if any)	Yes			
$n_{i \text{ operational}}$ Total number of group i project lamps that are operational during time interval t	Monitoring Checklist	Yes / No / NA	/1/	CAR-06, CAR-07 and CAR-08	OK
	Title and description in line with methodology?	Yes			
	Data unit correctly stated?	Yes			
	Source clearly referenced?	Yes			
	Correct value provided for estimation?	N/A			
	Has this value been verified?	N/A			
	Measurement method and procedure correctly described?	N/A			
	Purpose of data correctly described	Yes			

	Additional comments (if any)	Yes																				
Parameter: $\rho_{i_{\text{project}}}$ Rated power of the LEDs of the group of "i" project lamps (Watts)	<table border="1"> <tr> <td>Monitoring Checklist</td><td>Yes / No / NA</td></tr> <tr> <td>Title and description in line with methodology?</td><td>Yes</td></tr> <tr> <td>Data unit correctly stated?</td><td>Yes</td></tr> <tr> <td>Source clearly referenced?</td><td>Yes</td></tr> <tr> <td>Correct value provided for estimation?</td><td>N/A</td></tr> <tr> <td>Has this value been verified?</td><td>N/A</td></tr> <tr> <td>Measurement method and procedure correctly described?</td><td>N/A</td></tr> <tr> <td>Purpose of data correctly described</td><td>Yes</td></tr> <tr> <td>Additional comments (if any)</td><td>Yes</td></tr> </table>	Monitoring Checklist	Yes / No / NA	Title and description in line with methodology?	Yes	Data unit correctly stated?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	N/A	Has this value been verified?	N/A	Measurement method and procedure correctly described?	N/A	Purpose of data correctly described	Yes	Additional comments (if any)	Yes	/1/	CAR-06, CAR-07 and CAR-08	OK
Monitoring Checklist	Yes / No / NA																					
Title and description in line with methodology?	Yes																					
Data unit correctly stated?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided for estimation?	N/A																					
Has this value been verified?	N/A																					
Measurement method and procedure correctly described?	N/A																					
Purpose of data correctly described	Yes																					
Additional comments (if any)	Yes																					
Parameter: $O_{i_{\text{baseline}} / \text{project}}$ Average annual operating hours of group 'i' baseline / project lamps	<table border="1"> <tr> <td>Monitoring Checklist</td><td>Yes / No / NA</td></tr> <tr> <td>Title and description in line with methodology?</td><td>Yes</td></tr> <tr> <td>Data unit correctly stated?</td><td>Yes</td></tr> <tr> <td>Source clearly referenced?</td><td>Yes</td></tr> <tr> <td>Correct value</td><td>N/A</td></tr> </table>	Monitoring Checklist	Yes / No / NA	Title and description in line with methodology?	Yes	Data unit correctly stated?	Yes	Source clearly referenced?	Yes	Correct value	N/A	/1/	CAR-06, CAR-07 and CAR-08	OK								
Monitoring Checklist	Yes / No / NA																					
Title and description in line with methodology?	Yes																					
Data unit correctly stated?	Yes																					
Source clearly referenced?	Yes																					
Correct value	N/A																					

	<table border="1"> <tr> <td>provided for estimation?</td><td></td></tr> <tr> <td>Has this value been verified?</td><td>N/A</td></tr> <tr> <td>Measurement method and procedure correctly described?</td><td>N/A</td></tr> <tr> <td>Purpose of data correctly described</td><td>Yes</td></tr> <tr> <td>Additional comments (if any)</td><td>Yes</td></tr> </table>	provided for estimation?		Has this value been verified?	N/A	Measurement method and procedure correctly described?	N/A	Purpose of data correctly described	Yes	Additional comments (if any)	Yes											
provided for estimation?																						
Has this value been verified?	N/A																					
Measurement method and procedure correctly described?	N/A																					
Purpose of data correctly described	Yes																					
Additional comments (if any)	Yes																					
Parameter: /y Average annual technical grid losses	<table border="1"> <tr> <td>Monitoring Checklist</td><td>Yes / No / NA</td></tr> <tr> <td>Title and description in line with methodology?</td><td>Yes</td></tr> <tr> <td>Data unit correctly stated?</td><td>Yes</td></tr> <tr> <td>Source clearly referenced?</td><td>Yes</td></tr> <tr> <td>Correct value provided for estimation?</td><td>Yes</td></tr> <tr> <td>Has this value been verified?</td><td>Yes</td></tr> <tr> <td>Measurement method and procedure correctly described?</td><td>Yes</td></tr> <tr> <td>Purpose of data correctly described</td><td>Yes</td></tr> <tr> <td>Additional comments (if any)</td><td>Yes</td></tr> </table>	Monitoring Checklist	Yes / No / NA	Title and description in line with methodology?	Yes	Data unit correctly stated?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	Yes	Has this value been verified?	Yes	Measurement method and procedure correctly described?	Yes	Purpose of data correctly described	Yes	Additional comments (if any)	Yes	/1/	Ok	Ok
Monitoring Checklist	Yes / No / NA																					
Title and description in line with methodology?	Yes																					
Data unit correctly stated?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided for estimation?	Yes																					
Has this value been verified?	Yes																					
Measurement method and procedure correctly described?	Yes																					
Purpose of data correctly described	Yes																					
Additional comments (if any)	Yes																					
B.7.2. Description of the monitoring plan for a CPA:																						

B.7.2.1 Has PoA-DD contains monitoring plan for a CPA in accordance with the approved monitoring methodology, and identified the monitoring provisions and data parameters a CPA has to apply/monitor?	Yes, the monitoring plan for a CPA contained in the PoA-DD is in accordance with the approved monitoring methodologies. The monitoring provisions and data parameters a CPA has to apply/monitor have been correctly identified.	/1/, /B02/, /B01-b/	OK	OK
B.7.2.2. Are the QA/QC procedures described under monitoring appropriate sufficient to ensure the emission reductions achieved from the project activity can be reported ex-post and verified?	Yes, the QA/QC procedures described under monitoring are appropriate and further sufficient to ensure that the emission reductions achieved from the project activity will be reported ex-post and verified.	/1/, /B02/	OK	OK
B.7.2.3. Have all means of implementing the monitoring plan, e.g. equations necessary for ex-post emission reduction calculation, been described clearly and in line with the methodology?	Yes, all means of implementing the monitoring plan, e.g. equations necessary for ex-post emission reduction calculation, have been described clearly and are in line with the methodology.	/1/, /B02/	OK	OK
B.8 Consistency check and font size				
B.8.1 Does the following key terms and their description is consistent within the various section of the PoA-DD?		/1/	OK	OK
<i>P.S.: Additional rows may be added if required.</i>				
B.8.1.1. CME and Participants of PoA	Yes	/1/	OK	OK
B.8.1.2. Description/ Technology or measures to be employed by the CPA	Yes	/1/	OK	OK
B.8.1.3. Target group (end users type)	Yes	/1/	OK	OK
B.8.1.4. Eligibility criteria for inclusion of a CPA	Yes	/1/	OK	OK
B.8.2. Is the font size in all the respective documents is as per the requirements of Instructions for filling out the programme design document form for small-scale/large scale CDM programmes of activities?	Yes	/1/	OK	OK

Appendix 6.Assessment of sampling

Sl. No.	Checklist Questions	Assessment
1.	Does the PoA/PA opt for sampling for determination of any ex-ante parameters?	N/A the PoA does not opt sampling for determination of any ex-ante fix parameters at the PoA level.
2.	<p>Was the sample chosen by PP for determination of ex-ante parameters representative?</p> <p>P.S.: The justification on representativeness shall address at the minimum the following:</p> <ul style="list-style-type: none"> (a)Religious diversity (b)Ethnic diversity (c)Gender diversity (d)Economic diversity (e)Regional diversity (f)Seasonal fluctuations/variations (g)Diverse age-groups 	N/A
3.	<p>Has VT applied acceptance sampling approach to validate that sampling/survey efforts undertaken by PP to determine the ex-ante parameters were determined correctly? If yes, please provide a detailed justification of the approach adopted including information on (but not limited to):</p> <ul style="list-style-type: none"> (a)Selected AQL Level (b)Selected UQL Level (c)Selected Consumer Risk Level (d)Selected Producer Risk Level (e)Sample Size chosen for acceptance sampling (f)Acceptance number (c) (g)Approach adopted by VT to in case value of greater than c discrepant records were observed in the sample 	N/A
4.	Does the PoA-DD/PDD opt for sampling approach for monitoring of ex-post parameters?	<p>Yes, the PoA-DD opts for sampling for the determination of following ex-post parameters:</p> <ul style="list-style-type: none"> •<i>Operating hours of replaced baseline lamps or installed project lamps using run time meters</i> •<i>Number of operational project lamps in time interval 't'</i>
5.	Does the PoA-DD/PDD provide a sampling plan for determination of ex-post parameters?	Yes, the PoA-DD in I.7.2 has provided a detailed sampling for the above ex-post monitoring parameters.
6.	Sampling Design:	

6.1.	<p>Does the PoA-DD/PDD clearly define the objective of the proposed sampling plan?</p> <p>P.S.: Identification of parameter of interest</p>	<p>Yes, the PoA-DD defines the objective (as below) of the proposed sampling plan. <i>Sampling Objective is to obtain a reliable estimate of the key variables used in the estimation of GHG reductions: the following are the variables</i></p> <ul style="list-style-type: none"> •Operating hours of replaced baseline lamps or installed project lamps using run time meters •Number of operational project lamps in time interval 't' <p>DOE validated the sampling plan in accordance with the requirement of § 23 of the Standard: Sampling and surveys for CDM project activities and programmes of activities Version 07.0. Please refer assessment below.</p>
6.2	<p>Does the PoA-DD/PDD clearly define the reliability requirement (confidence and precision levels) to be achieved through the sampling effort and for the type of sampling effort (single CPA or across CPA sampling)?</p> <p>P.S.: reliability requirements shall be in accordance with the requirements of applied methodologies or Guideline: Sampling and surveys for CDM project activities and programmes of activities (Version 04.0) or Sampling and surveys for CDM project activities and programmes of activities (Version 07.0).</p>	<p><i>The sample size calculation is based on 90 per cent confidence interval and 10 per cent margin of error, which is inline with the requirements of § 20 of methodology of AMS-II.C. Version 05.0/B02/.. This is in accordance with the Standard: Sampling and surveys for CDM project activities and programmes of activities (Version 07.0).</i></p>
6.3	<p>Does the sampling plan clearly define the target population and describes any particular features associated with it?</p>	<p>Yes, the target population (i.e. <i>end user of the project scenario using the LED technology</i>) has been clearly defined in the PoA-DD. Furthermore, it also describes the key feature of the target population by stating <i>"The proposed project activity employs a homogenous technology with similar operating characteristics i.e. LED; but are dispersed amongst a large number of DISCOM connected consumers."</i></p> <p>Furthermore, in response to CAR 14 (9) raised, CME has clarified that Sampling frame for domestic and commercial usage shall be exclusive from one other. Individual CPAs shall demonstrate the sampling frame based on target population and accordingly calculate sample size, general guidelines of which has been presented in the PoA-DD.</p>
6.4	<p>Does the sampling plan clearly select and describe sampling method to be applied?</p> <p>a)Simple Random Sampling b)Stratified random Sampling c)Cluster Sampling</p>	<p>The PoA opts simple random sampling.</p>

	d)Systematic Sampling e)Multi-stage Sampling	
6.4.1.	Does the method agree with the description of the population? Are there clusters or strata, and if so, does it state what they are?	Yes, the selected sampling method is appropriate with the type of population. The PoA-DD does not state any clusters or strata. The chosen sampling method i.e. Simple Random Sampling which is deemed appropriate, as the population of the project is homogeneous.
6.5	Is the selected sampling method appropriate for the project type, sampling objective and target population?	Yes, considering the homogenous nature of target population, 'Simple Random Sampling' will be used in which unbiased random selection of individual households/commercial spaces is carried out to ensure that from the many samples which are drawn, the average sample would accurately represent the target population.
6.6	Has correct formula been applied for calculation of sample size? P.S.: Sample size calculation shall be in accordance with the type of sampling method and Guideline: Sampling and surveys for CDM project activities and programmes of activities (Version 04.0)	Validation team based on review of PoA-DD confirms that the calculated sample size is in accordance with the type of sampling as described in the Guideline: Sampling and surveys for CDM project activities and programmes of activities (Version 04.0). The equation used for the calculation of sample size is as per the guidelines of sampling
6.6.1	Is the proposed sample size adequate to achieve the minimum confidence/precision requirements?	The sample size and assumptions (where applicable, proportion/ /mean / standard deviation and populatation) used for calculating the sample size shall be determined at CPA level and thus deemed acceptable to the validation team. However CME has provided minimum sample size requirement as per per § 13 of the Standard: Sampling and surveys for CDM project activities and programmes of activities Version 07.0, which is deemed acceptable to the validation team. The sample size which shall be calculated at CPA would be adequate to achieve the minimum confidence/precision requirements provided the assumptions (such as proportion, mean and standard deviation) appropriately determined.
6.6.2	Is the ex-ante estimate of the population variance needed for the calculation of the sample size adequately justified?	Yes, the ex-ante estimate of the population variance needed for the calculation of the sample size is adequately justified.
6.6.3	Is the target value for the population parameter reasonably anticipated?	The sample size and assumptions (where applicable, proportion/ /mean / standard deviation and populatation) used for calculating the sample size shall be determined at CPA level and thus deemed acceptable to the validation team.

6.6.4	Does the estimate of variability seem reasonable?	Please refer assessment above.
6.7	Does the sampling plan provide clear description of the sampling frame to be used? P.S.: This shall agree with the information about the target population and sampling design.	Validation team based on review of PoA-DD confirms that the sampling plan provides clear description of the sampling frame to be used.
6.7.1	Does the Plan indicate that the sampling frame will be kept (e.g. in hard copy or a computer file of screen shot copy), and that random numbers will be generated, and these random numbers will then be used to select the sample?	As per the PoA-DD: <i>To ensure random selection, random number generators shall be applied.</i> 1. Each household is allotted a unique SSC-CPA serial number starting at 1 and upto the total number of households in SSC-CPA area. 2. Using random number generators, the households are randomly chosen. 3. The random number thus obtained is correlated with the utility provided residential customer code
6.7.2	Does the sampling frame contain the information necessary to implement the sampling approach?	Review of PoA-DD reveals that the sampling frame contains the information necessary to implement the sampling approach.
7	Data Collection	
7.1	Is the data collection/measurement method likely to provide reliable data given the nature of the parameters of interest and project, or is it subject to measurement errors?	Yes, the data collection/measurement method likely to provide reliable data given the nature of the parameters of interest and project.
7.1.1	Are the methods of data collection clear and unambiguous? P.S.: Some questions like “How much money do you spend on heating?”) can be subject to respondent error due to sensitivity or lack of recall viz., “How many times did you buy fuel last year?”), etc.,	Validation team noted that the parameter operating hours of the project/baseline lamp, the CME it its sampling plan has opted to install and meter run-timers. For , the parameter LED operation a survey is designed to check whether the proportion of LEDs in working condition. Validation team based on its sectoral expertise and professional judgement confirms that the methods of data-collection are clear and unambiguous.
7.1.1.2	Are there questions that could be subject to measurement error? P.S.: For example, is a particular measurement method known to under-record key data, such as the weight of bricks?	Validation team did not notice any question/survey method which could lead to measurement error. Please refer the assessment above.
8	QA/QC Procedure:	
8.1	Are the procedures for the data measurements well defined and do they adequately provide for minimizing non-sampling errors?	Validation team based on review of the PoA-DD, confirms that the procedures for the data measurements are well defined and its adequately provide for minimizing non-sampling errors. Please also refer to the assessment in section 7.1.1.1.

8.1.1	Is the quality control and assurance strategy adequate?	Yes, the proposed QC/QA in the PoA-DD is deemed strategically adequate.
8.1.2	Are there mechanisms for avoiding bias in the answer? P.S.: Mechanisms for avoiding non-sampling errors (bias) include good questionnaire design, well-tested questionnaires, possibly pilot testing the data collection.	As assessed in the section 7.1.1.1 above, validation team did not found any error any in the measurement method opted for proposed sampling/survey. The parameters are not based on qualitative questionnaire which could leads to non-sampling errors (biasness).
8.2	Are the proposed skill sets, qualifications and experience of the personnel to be engaged to conduct sampling adequate?	Validation team based on on site inspection interview confirms that CME has personnel with proposed skill sets, qualifications and experience to be engaged to conduct sampling adequately.
9.	Assessment of survey and data collection methods proposed for the PoA/PA	
9.1	Please specify which survey method has been used by PP? a)Hard-copy questionnaires b)smartphone or tablet app modules c)Data Sensor d)Telephone Interview e)E-mail or web-based platform or SMS f)Mailing (post) (questionnaires sent by regular mail)	As per the PoA-DD: Monitoring survey will be carried out either through computer assisted personal interview (CAPI) where data is collected via smart phone or tablet app module connected to data cloud allowing data validation checks to be enforced at the point of collection, hence minimizing errors <u>or</u> through questionnaires and physical observations where respondents are requested to fill pre-compiled questionnaire. The data will be collected and collated centrally by the CME/SSC-CPA implementer/s.
9.1.1	Is the selected method compliant with the requirements of the CDM methodology?	Validation team confirms that the selected method as indicated above is compliant with the re the requirements of the CDM methodology.
9.2	Does the proposed data collection method match the available sampling frame? P.S.: A sampling frame is a complete listing of all individual units (elements, members) that can be considered as a representation of the whole population, and which can be used as a basis for selecting a sample.	Yes, the proposed data collection method match the available sampling frame
9.2.1	What measures are in place to ensure that non-participating households are excluded from survey and data collection methods that do not rely on physical on-site visits?	Not applicable for the type of measurement opted under sampling/survey.
9.2.2	What mechanisms are in place to ensure that the intended recipient of the survey is the same person who completes the questionnaire? P.S.: This is relevant to all survey and data collection methods;	Not applicable for the type of measurement opted under sampling/survey.
9.3	Is the proposed survey and data collection method approach clear and suitable?	Yes, the proposed survey and data collection method approach clear and suitable
9.3.1	Is there a mechanism for ensuring that the data collected are of high quality?	Not applicable for the type of measurement opted under

	Have these mechanisms been tested in pilot telephone interviews? P.S.: For example, during a telephone interview, the interviewer relies on the respondent giving an accurate answer to the question that is being asked.	sampling/survey.
9.3.2	Does the chosen data collection method suit the capability of the intended recipients? P.S.: For example, a mail-based questionnaire method would be unsuitable for a target population with a low literacy rate;	Yes, the chosen data collection method suit the capability of the intended recipients. Please refer assessment above in section 7.1.1.1
9.4	Is the stated anticipated response rate reasonable for the selected survey and data collection method?	Yes, anticipated response rate reasonable for the selected survey and data collection method.
	Is the planning information described above contained in the data collection plan? P.S.: This is essential, as some methods afford weak control over the achievable response rate	Yes, the planning information described above contained in the data collection plan.
9.4.1	Is the anticipated response rate too low to match the number of required valid returns?	Not applicable, refer assessment under section 9.4
9.5	Is the selected survey and data collection method likely to yield results that are representative of the entire target population? P.S.: Some survey and data collection methods (e.g. web-based surveys) are known to suffer from respondent self-selection, so yielding results that are not representative of the entire population.	Yes, validation team based on review of PoA-DD, on site interviews with CME and assessment above confirms that the selected survey and data collection method likely to yield results that are representative of the entire target population.
9.5.1	Is a mechanism for redressing the bias proposed? If so, is it clearly explained and supported by existing endorsed methods?	Not applicable for the type of measurement opted under sampling/survey.
9.5.2	Does the data collection plan indicate that the existing sampling frame is fit for the intended purpose?	Yes, it is confirmed based on review of PoA-DD and on site inspection interview.
9.5.3	What mechanisms are in place to maximize the accuracy of the sampling frame? P.S.: For example, a sampling frame with telephone numbers of many digits is prone to recording errors, thus excluding eligible households whose telephone number is incorrect.	Please refer the assessment under section 7.1.1.1
9.6	Is the survey and data collection method likely to provide reliable data given the nature of the parameters of interest or is it subject to measurement errors by its very nature?	Yes, validation team confirms that the survey and data collection method likely to provide reliable data given the nature of the parameters of interest.
9.6.1	Are there questions whose answer could be subject to respondent error due to the delivery mechanism of the data collection method itself? P.S. For example, the answer “forty” units as opposed to “fourteen” units, in a	Not applicable for the type of measurement opted under sampling/survey. Please refer the assessment under section 7.1.1.1

	telephone interview when the respondent is asked to read a meter.	
9.6.2	Is a mechanism for mitigating the effect of under-coverage proposed? If so, is it clearly explained and supported by existing endorsed methods? P.S.: Some data collection methods are known to suffer from under-coverage, which occurs when sections of the target population do not appear in the sampling frame. For example, do all eligible households have reliable access to the Internet?	Not applicable for the type of measurement opted under sampling/survey. Please refer the assessment under section 7.1.1.1
9.7	Are the procedures for the selected survey and data collection method unambiguously defined and do they adequately provide for minimizing non-sampling errors?	Not applicable for the type of measurement opted under sampling/survey. Please refer the assessment under section 7.1.1.1
9.7.1	Is the quality control and assurance strategy adequate?	
9.7.2	Have potential sources of bias inherent in the selected data collection method, such as self-selection and under-coverage, been anticipated? Have mechanisms for mitigating these been considered?	Yes, validation team confirms that the potential sources of bias inherent in the selected data collection method, such as self-selection has been identified and mitigated through use of random sample generator, please refer the assessment under 6.7.1
9.8	Does the proposed data collection plan contain the information necessary to implement the selected survey and data collection method?	Yes, validation team based on review of PoA DD and on site inspection interview confirms that the proposed data collection plan contain the information necessary to implement the selected survey and data collection method
9.8.1	Are the proposed skill sets, qualifications and experience of the personnel/institutions engaged to conduct the standardized tests/data collection exercise adequate?	Not applicable for the type of measurement opted under sampling/survey. In general, the skill sets, qualifications and experience of the personnel were found adequate.
9.9	Does the PP have a process in place to ensure data quality is maintained to a high standard? This should include: a) Are the personnel trained and experienced? b) What is the level of supervision and guidance provided to staff? c) Is there a standardized system for data entry and analysis to produce final result? d) Is there a system or process in place to minimize the introduction of errors? e) Is there a system in place to ensure all collected data is processed; f) Are quality checks performed on data entered, for example range checks, g) inconsistency checks, checking of subsamples of data by supervisors; h) is there a system to check for errors, record and report errors reported and document the remedial action taken; i) What is the level of security and type of backup processes to guarantee data integrity, for example methods to prevent fraud and accidental deletion.	Yes the CME has a QC/QA system and if its effectively implemented, would ensure adherence of this checklist question.

- - - - -

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	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);•Make editorial improvements.
02.0	29 December 2017	Revision to align with the requirements of the “CDM validation and verification standard for programme of activities” (version 01.0).
01.0	4 May 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Registration Keywords: programme of activities, validation report		