




Validation report form for CDM programme of activities

(version 01.0)

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

VALIDATION REPORT

Title of the programme of activities (PoA)	Ethiopia Off-Grid Renewable Energy Program
Version number of the validation report	03
Completion date of the validation report	13/06/2016
Version number of PoA-DD applicable to this validation report	6.0
Date when PoA-DD was uploaded for global stakeholder consultation	23/12/2014
Coordinating/managing entity (CME)	Development Bank of Ethiopia
Host Party(ies)	Federal Democratic Republic of Ethiopia
Sectoral scope(s)	Sectoral Scope 1 – Energy Industries (renewable- / non-renewable sources)
Selected methodology(ies)	<p>AMS-III.AR Version 5 Substituting fossil fuel based lighting systems</p> <p>AMS-I.F Version 3 Renewable electricity generation for captive use and mini-grid</p> <p>AMS-I.L Version 3 Electrification of rural communities using renewable energy</p> <p>AMS-I.B Version 12 Mechanical energy for the user with or without electrical energy</p>
Selected standardized baseline(s)	Not applicable
Name of DOE	AENOR
Name, position and signature of the approver of the validation report	 Mª Carmen González Galán CDM Quality Manager

SECTION I. Executive summary

International Bank for Reconstruction and Development (IBRD) as trustee of the Carbon Initiative for Development (Ci-Dev) has commissioned AENOR to assess the information in the CDM-POA-DD (hereinafter POA-DD) for the Programme of Activities titled “Ethiopia Off-Grid Renewable Energy Program” (hereafter called POA) and the first CPA titled “DBE Off-grid renewable energy solar lamps CPA 1” against the requirements stated in the CDM Validation and verification Standard and the Standard for Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities.

The Ethiopia Off-Grid Renewable Energy Program (the PoA) is a nation-wide program for Ethiopia that targets the large segment of the population without access to electricity for basic uses. Due to poor grid coverage and the dispersed nature of settlements in rural areas, only 14% of the population are connected to the electricity grid¹. Meanwhile, more than 12 million rural households rely on sources other than the electricity grid for energy for lighting, with the majority utilizing kerosene lamps.² This PoA promotes scaling-up of the uptake of off-grid renewable energy technologies to provide electricity for lighting and other domestic, commercial, or institutional energy needs for households and other users either not connected to the grid, or not served by the grid due to acute shortage of electricity in the grid.

The Government of Ethiopia (GoE) is pursuing dramatic expansion of electricity generation and grid connection;³ however, even with tremendous investments to rapidly scale up grid connection in Ethiopia, millions of families will still be living without electricity by 2025, leaving a significant market niche that the PoA could contribute to address. Conscious of this reality, the PoA will promote goals related to off-grid energy access of the GoE’s Electricity Network Reinforcement and Expansion Project (ENREP), which includes targets of 150,000 household solar PV systems, 3,000 institutional solar PV systems and 3,000,000 small solar lighting systems (lamps/lanterns).¹ The GoE wishes to achieve this through the use of market-based instruments such as carbon finance, which will be available through this PoA.

The GoE already has some pilot experience with off-grid renewable energy technologies; however, these have failed to scale and bring about the widespread impact needed by the people of Ethiopia. One example of this is the Rural Electrification Fund (REF), a program established in 2003, which is entirely government funded and implemented under the Ministry of Water and Energy (MoWE). While the REF has purchased 25,000 Solar PV Systems, so far only 15,000 of these have been sold. Via REF, the Ethiopian government also funded technical design studies and environmental impact studies for five mini-hydro projects. However, there is not sufficient funding available for contracting the construction of the units. The PoA will improve upon the existing efforts by putting in place incentives to guarantee the quality and durability of off-grid RE technologies, and by creating a leading role for Private Sector Enterprises (PSEs) in the widespread sales of renewable electricity technologies.

¹ World Bank. *Project Appraisal Document for Electricity Network Reinforcement and Expansion Project (ENREP)*. Page 9. 29 May 2012.

² Central Statistical Agency, Federal Democratic Republic of Ethiopia. *Welfare Monitoring Survey 2011, Statistical Report: Indicators on Living Standard, Accessibility and Households Assets, Volume II*. Table 8.4 (b). April 2012.

³ Ministry of Finance and Economic Development (Ethiopia). *Growth and Transformation Plan 2010/11 – 2014/15*. Page 72. November 2010.

The Coordinating/Managing Entity (CME) of the PoA is the Development Bank of Ethiopia (DBE), a public enterprise that comprises a specialized financial institution established to promote the national development agenda through development finance and technical support to viable projects from the priority areas of the government. DBE mobilizes funds from domestic and foreign sources while ensuring its sustainability. The PoA is supported also by the Carbon Initiative for Development (Ci-Dev) of the World Bank. Ci-Dev will assist the program through direct support and capacity building to register the carbon component of the program in a timely manner and potentially purchase the generated credits.

Framework for Implementation of the PoA:

The PoA supports the implementation of a variety of off-grid renewable energy technologies, including potentially (1) solar lamps/lanterns (referred to collectively as *solar lamps*), (2) solar PV systems, solar PV plants, (3) mini-hydroelectricity plants and (4) solar pumps for irrigation. Each CPA under the program will include a group of similar technologies whose aggregate installed capacity or emission reductions are below the CDM small-scale thresholds. The PoA implements these four (4) technology types through the following methodologies:

- AMS-III.AR Version 5 Substituting fossil fuel based lighting systems
- AMS-I.F Version 3 Renewable electricity generation for captive use and mini-grid
- AMS-I.L Version 3 Electrification of rural communities using renewable energy
- AMS-I.B Version 12 Mechanical energy for the user with or without electrical energy

The PoA will implement five (5) different types of CPAs, namely:

- Solar Lamps under AMS-III.AR Version 5 Substituting fossil fuel based lighting systems (Type 1)
- Mini-Hydroelectric Plants under AMS-I.F Version 3 Renewable electricity generation for captive use and mini-grid (Type 2)
- Solar PV Systems under AMS-I.L Version 3 Electrification of rural communities using renewable energy (Type 3)
- Mini-Hydroelectric Plants under AMS-I.L Version 3 Electrification of rural communities using renewable energy (Type 4)
- Solar Pumps for Irrigation under AMS-I.B Version 12 Mechanical energy for the user with or without electrical energy (Type 5)

The assessment of the Programme of Activities (hereinafter PoA) was performed on the basis of UNFCCC criteria and host country criteria, as well as criteria given for the Programmes of Activities to provide for consistent operations, monitoring and reporting.

The validation of the PoA began in December 2014 and was concluded in June 2016. The validation was performed in the manner of an audit, where, a desk review of the POA titled Ethiopia Off-Grid Renewable Energy Program and first specific CPA titled “DBE Off-grid renewable energy solar lamps” were undertaken against the approved methodologies and CDM and other relevant criteria. The desk review was followed by a site visit to Addis Ababa and key stakeholders in Ethiopia.

The review of the programme design documentation and additional documents related to baseline and monitoring methodology, and the subsequent background investigation, follow-up interviews and review of comments by parties and stakeholders have provided AENOR with sufficient evidence to validate the fulfilment of the stated criteria.

The conclusions are summarised in detail as follows:

- The PoA is in line with all relevant host country criteria of Ethiopian DNA and Swedish DNA with the Letters of Approval from Ethiopia and the Letters of Approval of Sweden and with all relevant UNFCCC requirements for Programme of Activities.
- The operational and management plan established by the coordinating entity is suitable for the PoA validated.
- The baseline has been appropriately identified as per the applied methodologies.
- Eligibility criteria in the PoA-DD are sufficient to ensure that all CPAs would comply with the CDM requirements applicable to the PoA. These requirements include the means of demonstrating the additionality of the CPA and the applicability of the applied methodology.
- The programme's additionality is sufficiently justified in the PoA-DD.
- The monitoring plan and the Operational and Management Plan are transparent and adequate.
- The calculation of validated CPA emission reductions has been carried out in a transparent and conservative manner, following the approved methodology AMS-III.AR Version 5, corresponding to CPA type 1.
- Information on the local stakeholders' consultation by the project participants prior to submitting the PoA for validation is sufficiently provided in the PoA-DD.

In our opinion, the Program correctly applies and meets the relevant UNFCCC requirements for the CDM Programme of Activities and the relevant host country criteria.

On 02/06/2016 four requests for corrections were received regarding the list of verifiable eligibility criteria, baseline definition, methodological choice for the calculation of the baseline emissions and the crediting period of the CPA-DD. It has been required to submit new revised documentation. This new documentation includes further justification for the eligibility criteria, baseline definition, baseline calculation and crediting period of the CPA-DD. Further details have been included in Section B.2, Part III, section B.4, B.5.1, B.5.2, Part V, section B.4, B.5, B.5.2., Part VI, section B.3 of this report.

SECTION II. Validation team, technical reviewer and approver

II.1. Validation team members

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interview(s)	Validation findings
1.	Team Leader	IR	ROBLES OLMOS	Luis	AENOR	√	√	√	√

2.	Validator	IR	GESTO VILACOBÁ	Jose Antonio	AENOR	√	√	√	√
3	Validator	IR	LLORENTE PÉREZ	Elena	AENOR	√			√

II.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	GARCÍA-ROSELL	Manuel	AENOR
2	Technical reviewer and approver	IR	GONZÁLEZ GALÁN	Mª Carmen	AENOR

SECTION III.Means of validation

III.1. Desk review

The validation scope is defined as an independent and objective review of the POA-DD against the criteria stated in the PoA, Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords, the simplified modalities and procedures for CDM project activities, and the relevant decisions by the CDM Executive Board, including the approved baseline and monitoring methodologies.

AENOR, based on the “*Validation, verification and certification of clean development mechanism (CDM) project activities*” (IE-DTC-039) /1/, and the Validation and verification Standard, has used a risk-based approach in the validation, focusing on the identification of significant risks for CPAs inclusion in a PoA and the generation of CERs.

The following documents were reviewed as part of the scope of the activity:

- CDM-PoA-DD /2//3/, including baseline study and monitoring plan.
- DBE Off-grid renewable energy solar lamps CPA 1 CPA-DD /4/.
- AMS-III.AR Version 5 Substituting fossil fuel based lighting systems /5/.
- AMS-I.F Version 3 Renewable electricity generation for captive use and mini-grid /6/.
- AMS-I.L Version 3 Electrification of rural communities using renewable energy /7/.
- AMS-I.B Version 12 Mechanical energy for the user with or without electrical energy /8/.

- Decision 3/CMP.1 and relevant decisions and guidelines from the EB /9/
- Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities. Version 04.0 /10/
- Clean Development mechanism project standard version 09.0 /11/
- Clean development mechanism project cycle procedure version 09.0 /12/
- CDM Validation and Verification Standard (version 09.0) /13/
- Spreadsheet for the ERs calculation of CPA DBE Off-grid renewable energy solar lamps CPA 1 CPA-DD /14/
- Associated documentation (environmental requirements, stakeholder consultation process etc)

The validation is not meant to provide any consultancy services to the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the PoA-DD.

III.2. On-site inspection

The validation of the PoA began in December 2014 and was concluded in June 2016. The validation was performed in the manner of an audit, where, a desk review of the POA titled *Ethiopia Off-Grid Renewable Energy Program* and first CPA titled DBE Off-grid renewable energy solar lamps CPA 1 was undertaken against the approved methodology and CDM and other relevant criteria.

Duration of on-site inspection: 02/03/2015 to 05/03/2015

No.	Activity performed on-site	Site location	Date	Team member
1.	Development Bank of Ethiopia <ul style="list-style-type: none"> Description of the project (capacity, etc.) Confirmation of not registered as an individual CDM project activity. Letter of intent of the CPA. Description of the project (capacity, location, initial of operations, lifetime, etc.) Licenses for operation, local permits. Monitoring plan (collection of data) Confirmation of not registered as an individual CDM project activity. Voluntary participation of the PoA. 	Addis Ababa ETHIOPIA	02/03/2015	LUIS ROBLES OLMOS JOSE ANTONIO GESTO
2	Consultant firm: <ul style="list-style-type: none"> Clarifications about the CPA. Baseline/Project emissions Calculations. Eligibility criteria for inclusion. Monitoring plan (monitoring parameters) 	Ethiopia	03/03/2015	LUIS ROBLES OLMOS JOSE ANTONIO GESTO

III.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Ayana	Eyob	Manager	02-March-2015	Confirmation of not registered as an individual CDM project activity. Letter of intent of the CPA. Description of the project (capacity, location, initial of operations, lifetime, etc.)	LUIS ROBLES OLMOS JOSE ANTONIO GESTO
2	Lucas	Belenky	Consultant	03-March-2015	Clarifications about the CPA. Baseline/Project emissions Calculations. Eligibility criteria for inclusion. Monitoring plan (monitoring parameters	LUIS ROBLES OLMOS JOSE ANTONIO GESTO

III.4. Sampling approach

For the proposed PoA (and the first specific CPA submitted together with this PoA for request for registration), the submission of the monitoring plan is delayed and submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. This option is stated in accordance with paragraph 62 of the CDM project standard (version 09.0).

III.5. Clarification requests, corrective action requests and forward action requests raised

Areas of validation of compliance	No. of CL	No. of CAR	No. of FAR
Part I			
General description of the PoA			
• PoA design document		CAR 2	
• Purpose and general description of the PoA	CL 1 CL 2 CL 3		
o Generic CPA(s)			
o Specific-case CPA(s) submitted with the PoA			
Demonstration of additionality and development of eligibility criteria			
• Demonstration of additionality of the PoA			
• Eligibility criteria for inclusion of CPA(s) in the PoA		CAR 3 CAR 5 CAR 6	
Management system		CAR 4 CAR 7	

Duration of the PoA			
Environmental impacts	CL 4		
Local stakeholder consultation	CL 5		
Approval and authorization		CAR 1	
Global stakeholder consultation			
Contribution to sustainable development			
Modalities of communication			
Part II			
General description of generic CPA			
Application of a baseline and monitoring methodology and standardized baseline			
<ul style="list-style-type: none"> • Applicability of selected methodology(ies) and/or standardized baseline <ul style="list-style-type: none"> ○ Deviation from methodology ○ Clarification on applicability of methodology, tool and/or standardized baseline • Sources and GHGs • Description of baseline scenario • Demonstration of eligibility for a generic CPA • Estimation of emission reduction or net GHG removals by sinks of the generic CPA <ul style="list-style-type: none"> ○ Explanation of methodological choices ○ Data and parameters fixed ex ante ○ Ex ante calculation of emission reductions or net GHG removals by sinks • Application of the monitoring methodology and description of the monitoring plan <ul style="list-style-type: none"> ○ Data and parameters to be monitored by the generic CPA ○ Description of the monitoring plan for the generic CPA 			
Total	5	7	

Section IV. Internal quality control

Following the completion of the assessment process by the validation team, all documentation undergoes an internal quality control through a technical review before submission to the CDM-EB. The technical reviewer is a qualified member of AENOR, independent from the team that carried out the validation of the project activity. The technical reviewer or the team appointed for the technical review are qualified in the technical area and sectoral scope of the PoA.

Section V. Validation opinion

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AENOR has performed a validation of the Programme of Activities “**Ethiopia Off- Grid Renewable Energy Program**”. The validation was performed on the basis of UNFCCC criteria and host country criteria, as well as criteria given for the Programmes of Activities to provide for consistent operations, monitoring and reporting.

The validation consisted of the following three phases: i) a desk review of the programme design, the baseline and the monitoring plans; ii) On site inspection and follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final validation report and opinion.

The review of the programme design documentation and additional documents related to baseline and monitoring methodologies, and the subsequent background investigation, follow-up interviews and review of comments by parties and stakeholders have provided AENOR with sufficient evidence to validate the fulfilment of the stated criteria.

The conclusions are:

- The PoA is in line with all relevant host country criteria of Ethiopian DNA and Swedish DNA with the Letters of Approval from Ethiopia and the letter of Approval from Sweden and with all relevant UNFCCC requirements for Programme of Activities.
- The operational and management plan established by the coordinating entity is suitable for the PoA validated.
- The baseline has been appropriately identified as per the applied methodologies.
- Eligibility criteria in the PoA-DD are sufficient to ensure that all CPAs would comply with the CDM requirements applicable to the PoA. These requirements include the means of demonstrating the additionality of the CPA and the applicability of the applied methodology.
- The programme's additionality is sufficiently justified in the PoA-DD.
- The monitoring plan and the Operational and Management Plan are transparent and adequate.
- The calculation of validated CPA emission reductions (first specific CPA titled "**DBE Off-grid renewable energy solar lamps CPA 1**") has been carried out in a transparent and conservative manner, following the approved methodology AMS-III.AR Version 5, corresponding to CPA type 1.
- Information on the local stakeholders' consultation by the project participants prior to submitting the PoA for validation is sufficiently provided in the PoA-DD.

In AENOR's opinion, the Program correctly applies and meets the relevant UNFCCC requirements for the CDM Programme of Activities and the relevant host country criteria.

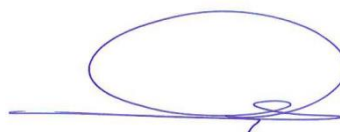
13/06/2016



Mª Carmen González Galán

Authorized person

13/06/2016



Luis Robles Olmos

Validation Team Leader

Section VI. Validation findings

PART I. Programme of activities

SECTION A. General description of the PoA

A.1. PoA design document

Means of validation	<p>The POA design document has been assessed against the forms published by the UNFCCC and Instructions for filling out the validation report form for CDM Programme of Activities /15/. The title in the POA-DD is “<u>Ethiopia Off- Grid Renewable Energy Program</u>”, and clearly enables to identify the unique CDM Programme Activity. The title is consistent in all sections of the PoA-DD, and version number and the date of the version are correctly detailed.</p> <p>The POA-DD was made public for stakeholder consultation according to the CDM project Standard on 23/12/2014, and during the GSC process no comments were received.</p> <p>Date and version have been accordingly modified during the process of validation, and the final version is 6.0, dated on 08/06/2016.</p> <p>The form of the PoA-DD used (CDM-SSC-PoA-DD-FORM version 04.0) is in accordance with form in force published in the UNFCCC Website, and all sections have been correctly completed, using same format without modifying its font, headings or logo, and without any other alteration to the form.</p>
Findings	CAR 2: The information on project participants should be clearly described in Appendix I
Conclusion	<p>Schedule and support documentation have been provided to the audit team. Dates are consistent with the documentation provided.</p> <p>Due to the clarifications and corrective actions requested during the validation process, the project participants made a final version (6.0) of the PoA-DD dated 08/06/2016 which includes corrections or clarifications to all issues raised.</p> <p>The PoA-DD is in compliance with relevant form and guidance as provided by UNFCCC. AENOR considers that the guidelines for the completion of the PoA documents have been followed. Relevant information was provided by the Managing entity and/ or project participants in the applicable POA sections.</p>

A.2. Purpose and general description of the PoA

Means of validation	<p>The information presented in the POA documents on the technical design is consistent with the actual planning and implementation of the Programme of Activities confirmed in the following ways:</p> <ul style="list-style-type: none"> • A review of data, information and support documentation. • An on-site visit to the country where the PoA is being implemented and interview with relevant stakeholder and personnel with knowledge of the project in attendance. • A review of information related to similar projects or technologies which
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have been used to validate the accuracy and completeness of the programme description.

The description of the PoA, as it is included in the POA-DD was verified during the desk review.

The Ethiopia Off-Grid Renewable Energy Program (the PoA) is a nation-wide program for Ethiopia that targets the large segment of the population without access to electricity for basic uses. Due to poor grid coverage and the dispersed nature of settlements in rural areas, only 14% of the population are connected to the electricity grid. Meanwhile, more than 12 million rural households rely on sources other than the electricity grid for energy for lighting, with the majority utilizing kerosene lamps. This PoA promotes scaling-up of the uptake of off-grid renewable energy technologies to provide electricity for lighting and other domestic, commercial, or institutional energy needs for households and other users either not connected to the grid, or not served by the grid due to acute shortage of electricity in the grid.

The Government of Ethiopia (GoE) is pursuing dramatic expansion of electricity generation and grid connection; however, even with tremendous investments to rapidly scale up grid connection in Ethiopia, millions of families will still be living without electricity by 2025, leaving a significant market niche that the PoA could contribute to address. Conscious of this reality, the PoA will promote goals related to off-grid energy access of the GoE's Electricity Network Reinforcement and Expansion Project (ENREP), which includes targets of 150,000 solar household solar PV systems, 3,000 institutional solar PV systems and 3,000,000 small solar lighting systems (lamps/lanterns). The GoE wishes to achieve this through the use of market-based instruments such as carbon finance, which will be available through this PoA.

The GoE already has some pilot experience with off-grid renewable energy technologies; however, these have failed to scale and bring about the widespread impact needed by the people of Ethiopia. One example of this is the Rural Electrification Fund (REF), a program established in 2003, which is entirely government funded and implemented under the Ministry of Water and Energy (MoWE). While the REF has purchased 25,000 solar home systems (SHS), so far only 15,000 of these have been sold. Via REF, the Ethiopian government also funded technical design studies and environmental impact studies for five mini-hydro projects. However, there is not sufficient funding available for contracting the construction of the units. The PoA will improve upon the existing efforts by putting in place incentives to guarantee the quality and durability of off-grid RE technologies, and by creating a leading role for Private Sector Enterprises (PSEs) in the widespread sales of renewable electricity technologies.

The Coordinating/Managing Entity (CME) of the PoA is the Development Bank of Ethiopia (DBE), a public enterprise that comprises a specialized financial institution established to promote the national development agenda through development finance and technical support to viable projects from the priority areas of the government. DBE mobilizes funds from domestic and foreign sources while ensuring its sustainability. The PoA is supported also by the Carbon Initiative for Development (Ci-Dev) of the World Bank. Ci-Dev will assist the program through direct support and capacity building to register the carbon component of the program in a timely manner and potentially purchase the generated credits.

As it is established in the POA-DD, the coordinating entity will follow guidance provided by the "*Guidelines on Assessment of De-bundling for SSC Project Activities*" /16/ in order to check that any of the SSC-CPAs to be included in the POA is not a de-bundled component from another CDM Programme Activity (CPA)

	<p>or large scale CDM project activity.</p> <p>The PoA CME (Coordinating and Managing Entity) is authorized as Ethiopian's Project Participant and authorized by the host party Ethiopian DNA as the Coordinating and Managing Entity. Information regarding project participants is confirmed as consistent in the PoA-DD, CPA-DD and LoA.</p> <p>Information regarding CME and programme participants is confirmed as consistent in section A.4 and Appendix 1 of the POA-DD.</p> <p>Through reviewing the technical specifications for the first CPA /27/ the Agreement between CME and the first CPA implementer /18/, the Programme Idea Note /19/ and the World Bank project Appraisal document – DBE cooperation on carbon finance /20/ the audit team has crosschecked the description included in the PoA-DD. All other permits were required to the PP, nevertheless, it was confirmed during on site visit that no permit is required for the PoA-DD.</p> <p>The location of the project activity is provided in Section A.5 of the PoA-DD. The programme is located in the Federal Democratic Republic of Ethiopia, across the whole country.</p>
Findings	<p>CL 1: A Timeline of the project is required to check the consistency of the timeline proposed.</p> <p>CL 2: Evidences that the Programme description is in compliance with the actual situation or planning shall be provided to the validation team.</p> <p>CL 3: A schedule for the implementation of the SSC-PoA is required.</p>
Conclusion	<p>Technical description included in the POA-DD has been supported with documented evidence. This documentation provided is considered proof enough to demonstrate that the CME is able to develop the Programme of Activities.</p> <p>In conclusion, AENOR confirms that the POA description, as included in the POA-DD, is consistent, sufficiently accurate and complete in order to comply with the requirements of the CDM.</p>

A.2.1. Generic CPA(s)

Title, identification/reference number and/or version number	Sectoral scope(s)	Selected methodology(ies) and/or standardized baseline(s)
Type 1 - Solar Lamps	1	AMS-III.AR Version 5 Substituting fossil fuel based lighting systems
Type 2 - Mini-Hydroelectric Plants	1	AMS-I.F Version 3 Renewable electricity generation for captive use and mini-grid
Type 3 - Solar PV systems	1	AMS-I.L Version 3 Electrification of rural communities using renewable energy
Type 4-Mini-Hydroelectric Plants	1	AMS-I.L Version 3 Electrification of rural communities using renewable energy.

Title, identification/reference number and/or version number	Sectoral scope(s)	Selected methodology(ies) and/or standardized baseline(s)
Type 5- Solar Pumps for Irrigation	1	AMS-I.B Version 12 Mechanical energy for the user with or without electrical energy

A.2.2. Specific-case CPA(s) submitted with the PoA

Specific-case CPA(s) reference number(s)	Generic CPA title, identification/ reference number and version number	Host Party	Crediting period dates of the specific-case CPA
DBE Off-grid renewable energy solar lamps CPA 1	Type 1 - Solar Lamps DBE Off-grid renewable energy solar lamps CPA 1 Version 5.0 (08/06/2016)	Federal Democratic Republic of Ethiopia	01/08/2016-31/07/2023

SECTION B. Demonstration of additionality and development of eligibility criteria

B.1. Demonstration of additionality of the PoA

Means of validation	<p>The additionality of the programme has been assessed in accordance with the Tool on the Demonstration of Additionality of Small-Scale Project Activities Version 10.</p> <p><u>Solar Technologies (CPA Types 1, 3, , and 5):</u></p> <p>According to the Guidelines on the Demonstration of Additionality of Small-Scale Project Activities, Version 9.0, “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 (e.g. installed capacity up to 15 MW).”</p> <p>This positive list includes, para. 11(a), “The following grid-connected and off-grid renewable electricity generation technologies: (i) Solar technologies (photovoltaic and solar thermal electricity generation).”the four technologies included in this program comply with the requirement of para. 2(a)(i), because they are solar photovoltaic technologies, namely (1) solar lamps, (2) SHS, (3) institutional solar PV systems, and (4) solar pumps for irrigation.</p> <p>The expected installed capacity of each of the technologies is up to 5 Wp for solar lamps / solar lanterns, up to 200 Wp for solar PV systems, , and up to 5 kWp for solar pumps for irrigation.</p> <p><u>Hydro Technology (CPA Types 2 and 4):</u></p> <p>According to the same tool on the Demonstration of Additionality of Small-Scale Project Activities, Version 10.0, the positive list also includes, para. 11(d), “Rural electrification project activities using renewable energy sources in countries with rural electrification rates less than 20%; the most recent available data on the</p>
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	<p>electrification rates shall be used to demonstrate compliance with the 20 per cent threshold. In no case shall data be used if older than three years from the date of commencement of validation of the project activity.”</p> <p>The one remaining technology of the four technologies included in this program, (4) Mini-hydroelectricity plants, complies with this requirement of para. 11(d), because it consists of renewable, hydroelectric technology to provide zero-emissions electricity for rural users such as off-grid communities, mini-grids, and so forth. The overall national electrification rate is only around 14%⁴ and the rural rate is around 5% or lower⁵</p> <p>Typical hydroelectricity installations under the PoA are expected to have a capacity less than or equal to 5 MW, although units up to 15 MW will be eligible.</p> <p>As each CPA under the PoA meets the requirements of either item (a)(i) or item (d) under the positive list, it follows that each CPA under the PoA is automatically additional and further documentation of Barriers are not required.</p> <p>Evidences and documentation required have been provided to the validation team and during validation process, it has been demonstrated that the programme is a voluntary coordinated action that would not be implemented in the absence of CDM. No mandatory policy applies to the POA or technologies. Furthermore, all assumptions have been stated in a transparent and conservative manner.</p>
Findings	No finding has been raised regarding additionality assessment.
Conclusion	<p>The additionality of the programme has been presented in section B.1 of the PoA-DD. The approach used in the PoA-DD has been assessed initially through the document review followed by on-site discussions. Finally, the data, rationales, assumptions, justifications, and documentation provided have been verified using local knowledge as well as sectoral and financial expertise.</p> <p>The proposed PoA is a voluntary action by the coordinating/managing entity. Based on the submitted documents and substantiation it is evident that this voluntary coordinated action would not be implemented in the absence of the PoA.</p> <p>It has been clearly demonstrated that there is no mandatory policy or regulation in the host country enforcing the implementation of this kind of projects and no such regulations are foreseeable. This was confirmed based on the on-site interviews and the host country experience of the audit team.</p> <p>In addition, the PoA-DD establishes in Sections B.2 (eligibility criteria) the conditions that ensure that CPAs meet the requirements pertaining to the demonstration of the additionality.</p> <p>AENOR validation team confirms that CME demonstrated that compliance with the additionality-related eligibility criteria set in the PoA design document will ensure that all the relevant additionality criteria have been met.</p>

⁴ World Bank. *Project Appraisal Document for Electricity Network Reinforcement and Expansion Project (ENREP)*. Page 9. 29 May 2012.

⁵ Central Statistical Agency, Federal Democratic Republic of Ethiopia. *Welfare Monitoring Survey 2011, Statistical Report: Indicators on Living Standard, Accessibility and Households Assets, Volume II*. Table 8.4 (b). April 2012.

B.2. Eligibility criteria for inclusion of CPA(s) in the PoA

The PoA will implement five (5) different types of CPAs, namely:

- Solar Lamps under AMS-III.AR Version 5 Substituting fossil fuel based lighting systems (Type 1)
- Mini-Hydroelectric Plants under AMS-I.F Version 3 Renewable electricity generation for captive use and mini-grid (Type 2)
- Solar PV systems under AMS-I.L Version 3 Electrification of rural communities using renewable energy (Type 3)
- Mini-Hydroelectric Plants under AMS-I.L Version 3 Electrification of rural communities using renewable energy (Type 4)
- Solar Pumps for Irrigation under AMS-I.B Version 12 Mechanical energy for the user with or without electrical energy (Type 5)

In accordance with these five type of CPAs, the eligibility criteria have been stated in the POA-DD in five tables, one per type of CPA. All of them are detailed below:

Eligibility criteria for CPAs TYPE 1

No.	Eligibility criteria as set out in the PoA-DD	Means of validation/Findings/Conclusion
1	<p><u>Geographical boundary</u></p> <p>The CPA is located entirely within the national boundaries of Ethiopia</p>	<p>Location information of recipients of solar lamps in the program database, or planned locations for systems still to be sold as in section A.3 and A.7 of the specific CPA.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is clearly set out and it is verifiable.</p>
2	<p><u>Double-counting</u></p> <p>The solar lamps sold under the CPA will be uniquely identifiable, to avoid double counting through a unique serial number clearly visible on each lamp under the CPA</p>	<p>Conformation that ownership and contact information for recipients of solar lamps along with the recording of the unique serial number of the solar lamp purchased by the customer will be collected in the program database. An image of the unique serial number(s) for each technology type will be provided.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, it will be verifiable.</p>
3	<p><u>Start date</u></p> <p>The start date of the CPA is on or after the start date of the PoA. The start date of the CPA is the date on which construction, implementation, or real action concerning the CPA, as shown through a contract detailing real action or an invoice for equipment</p>	<p>Sales receipt or wholesale purchase with the date of sale/purchase of the first lamp under the CPA.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is transparently set out and</p>

		verifiable.
4	<p><u>Methodology applicability</u></p> <p>Project lamps' batteries are charged using a renewable energy system included as part of the project lamp</p>	<p>Solar lamp technical information showing that the charging relies on a photovoltaic system is shown in section A.5 of the specific CPA.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is clearly stated.</p>
5	<p>The project lamps use a replaceable, chargeable battery</p>	<p>Solar lamp technical information showing that the battery is replaceable and chargeable is shown in section A.5 of the specific CPA.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is clearly stated.</p>
6	<p>Project lamps shall have a warranty of a minimum of one year from the time the end-user takes ownership or begins using the lamp. At a minimum, the warranty shall cover free replacement or repair of any failed lamps, batteries and where applicable solar panels.</p>	<p>Solar lamps warranty provisions is shown in section A.5 of the specific CPA.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is clearly stated.</p>
7	<p>The activity shall ensure that the replaced baseline lamps are those that directly consume fossil fuel</p>	<p>The common practice of fuel usage for lighting in the project region according to representative sample surveys, official data or peer reviewed literature as shown in section A.5 of the specific CPA.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
8	<p>The proposed or implemented distribution method of the project lamps is described</p>	<p>Method is included in CPA-DD in section A.3</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
9	<p>The method to encourage the end-users to use the project lamps and discourage hoarding is described</p>	<p>Method is included in CPA-DD in section A.5.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
10	<p>The method to comply with regulations pertaining to the use and disposal of batteries</p>	<p>Method is included in CPA-DD in section A.5.</p>

	is described	<p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
11	Measures are in place to ensure that lamp owners have access to replacement batteries of comparable quality	<p>Measures are described in CPA-DD in section A.5.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
12	Project lamps are certified by their manufacturer to have a rated average life of at least 10,000 hours (Option 2), defined as the time at which the lamp's initial light output will decline by no more than 30%. Under Option 2, paragraph 18, as an alternative to long-term measurement of light output over the full lifetime of the lamp, a shortened measurement period of 2,000 hours may be chosen. If a 2,000 hour test period is used, the relative luminous flux shall not decrease by more than 15 per cent during the 2,000 hours of continuous operation. If the average life value is not available ex ante, it shall be made available for verification.	<p>Confirmation by a third-party testing organization using an applicable standard and testing protocol of the rated average life of the project lamps in shown for each technology in section A.5.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
13	Project lamps shall meet or exceed the following minimum performance characteristics, which should be proven by third-party test results: luminous flux of 25 lumens or illuminance of 50 lux over an area equal to or greater than 0.1 m ² when suspended at a distance of 0.75 meters or self supported. The light output over a 2,000 hour lumen maintenance test should not decline by more than 15%.	<p>Test results, reports or equivalent for solar lamps implemented under the CPA in shown for each technology in section A.5.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
14	Project lamps shall be charged by a renewable energy system included as part of the lamp and meet or exceed the following minimum performance characteristics, which should be proven by third-party test results: Daily Burn Time (DBT) shall be greater than or equal to 4.0 hours.	<p>Test results, reports or equivalent for solar lamps implemented under the CPA is shown for each technology in section A.5.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
15	The minimum design specifications for project lamps are described in line with AMS-III.AR requirements	<p>Specifications are included in CPA-DD in section A.5.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
16	In line with AMS-III.AR requirements, the project lamps shall achieve a minimum level of protection with regard to physical ingress and water protection in accordance with IEC 60529, or an equivalent national standard, or	<p>Confirmation by a third-party testing organization using an applicable standard and testing protocol of the Ingress Protection class of the lamp is in section A.5.</p> <p>This criterion was validated by means of documents</p>

	the approved norms indicated in paragraph 14 including <i>Lighting Africa Quality Test Method</i> . If test results are not available <i>ex-ante</i> , they shall be made available at project verification.	reviewed as stated above and the interviews performed with the CME. Therefore, this criterion is transparently set out and verifiable.
17	<u>Debundling check</u> Each CPA will demonstrate it is exempt from a debundling check by showing that each solar lamp shall result in an expected annual emission reduction less than 1% of the small-scale threshold (i.e. 600 tCO ₂ e).	Section A.12 and an Excel Calculation will show the expected emission reduction per solar lamp and demonstrate that the emissions per sub-system result in less than 1% of the small-scale threshold. This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME. Therefore, this criterion is transparently set out and verifiable.
18	<u>Threshold check / Additionality demonstration</u> The total annual emission reductions of the solar lamps is less than or equal to 60 ktCO ₂	Evidence of the number of implemented project lamps and the calculation of the expected reductions per lamp is shown in an Excel Calculation. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
19	<u>Additionality demonstration</u> The technology(ies) installed under the CPA pertain to Solar technologies (photovoltaic and solar thermal electricity generation)	Solar lamp technical information showing that the charging relies on a photovoltaic system is shown in section A.5. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
20	<u>Crediting Period</u> The CPA will have a fixed crediting period.	The type of crediting period is fixed as stated in section A.9.2 of the CPA. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
21	<u>Public Funding</u> The CPA will confirm that it is not receiving funding dedicated as Official Development Assistance (ODA) through a two-stage process. The first stage is a statement by the CPA Implementer if it is receiving public funding. If the CPA is receiving public funding second statement is required from the funder affirming that the public funding is not ODA	A statement that the activity is not receiving public funding or the public funding is not ODA is shown in Appendix 2. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
22	<u>CME Approval</u> The CPA will prove it has received the approval of the CME of the PoA or state the CPA Implementer and the CME are the same	A letter showing the CME has approved the CPA or a statement in section E that the CME and CPA Implementer are the same. This criterion was validated by means of documents reviewed as stated above.

		Therefore, this criterion is transparently set out and verifiable.
23	<u>Target Group</u> The CPA targets households and/or institutions/SMEs	Target groups are households and/or institutions/SMEs as shown in section A. 3 and B.2. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
24	<u>Sampling</u> The CPA will adhere to the sampling requirements stipulated by the CME in section C of the PoA-DD	Adherence to the sampling requirements of the PoA is shown in section D.7.2. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
25	<u>Stakeholder Consultation and Environmental Analysis</u> The Local Stakeholder Consultation and Environmental Impact Analysis have been conducted at the PoA level. Each CPA will take into consideration the comments from the Stakeholder Consultation and abide by the environmental regulations of the host country	Consideration of the comments from Local Stakeholder Consultation, and a statement that the CPA will adhere to the environmental regulations of the host country as shown in section B.1 and C.1 of the CPA. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
26	<u>Distribution</u> The CPA will use one or multiple of the following methods for distribution of appliances implemented under the CPA: <ol style="list-style-type: none"> 1. Direct sale/service to end-users 2. Bulk sales to distributors who sell on to the end user 3. Distribution to the end-user by an organization receiving the products/measures from the CME 	Description of the distribution method is provided in section A.3. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
27	<u>CER Ownership</u> The CPA will assure ownership of the CERs is secured by the CME	A statement by the CPA Implementer that it has yielded the rights to any CERs to the CME and that the CPA Implementer will ensure any distributors, manufacturers, or service providers cede their rights to the resulting CERs as well This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.

Eligibility criteria for CPAs TYPE 2

No	Eligibility criteria as set out in the PoA-DD	Means of validation/Findings/Conclusion
1	<p><u>Geographical boundary</u> The CPA is located entirely within the national boundaries of Ethiopia</p>	<p>Location information of Mini-hydroelectricity plants in the program database, or planned locations for systems still to be implemented as in section A.3 and A.7 of the specific CPA</p> <p>This criterion was validated by means of documents reviewed as stated above.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
2	<p><u>Start Date</u> The start date of the CPA is on or after the start date of the PoA. The start date of the CPA is the date on which real action concerning the CPA, as shown through a contract for equipment or construction</p>	<p>Contract showing procurement of equipment or construction services concerning the CPA.</p> <p>This criterion was validated by means of documents reviewed as stated above.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
3	<p><u>Double-counting</u> The Mini-hydroelectricity plants installed under the CPA will be uniquely identifiable, to avoid double counting through GPS coordinates of each plant installed</p>	<p>Ownership and contact information for implementers of Mini-hydroelectricity plants along with identification information and the GPS coordinates of the facility (e.g. serial number) in the program database; or evidence of procedures to record this information for systems still to be implemented. CPAs will provide a sample form showing the information to be collected for each system under the CPA containing the information required such as contact information and GPS coordinates.</p> <p>This criterion was validated by means of documents reviewed as stated above.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
4	<p><u>Methodology applicability</u> As per AMS-I.F , the users of the mini-hydroelectricity plant previously used electricity from a fossil fuel fired captive power plant or a carbon intensive mini-grid, where a mini-grid is a small-scale power system with a total installed capacity of its generators not exceeding 15 MW that is not connected to a national or a regional grid</p>	<p>Diagnostic analysis or feasibility assessment for the mini-hydroelectricity plant showing the existing electricity source of its users.</p> <p>This criterion was validated by means of documents reviewed as stated above.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
5	<p>Any mini-hydroelectricity plant that has a reservoir must satisfy one of the following criteria: if it is an existing reservoir, there is no change in its volume; if it is an existing reservoir and its volume is increased, then the power density of the power plant is greater than 4 W/m²; if it is a new reservoir, then the power density of the</p>	<p>Technical information of the mini-hydroelectricity plants installed under the CPA demonstrate the status of the reservoir and permit calculation of the power density greater than 4 W/m².</p> <p>This criterion was validated by means of documents reviewed as stated above.</p>

	power plant is greater than 4 W/m2.	Therefore, this criterion is transparently set out and verifiable.
6	Each mini-hydroelectricity plant is either a new power plant at a site where there was no renewable energy power plant operating previously, or is a capacity addition	Technical specifications of the installations under the CPA to determine whether the plant is new or adds capacity to existing renewable power generation. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
7	In any case where the mini-hydroelectricity plant is an addition of capacity to existing renewable power generation, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units	Technical specifications of the installations under the CPA where the CPA adds capacity to existing renewable power generation. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
8	If electricity produced by a mini-hydroelectricity plant is delivered to a third party, a contract between the supplier and consumer(s) of the energy ensures that there is no double counting of emission reductions	Contracts with consumer(s) for any relevant cases, or model contracts in the case of plants not yet installed. This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME. Therefore, this criterion is transparently set out and verifiable
9	<u>Technology</u> Type & level of service check for the mini-hydroelectricity plant	Technical specifications showing the capacity, estimated capacity factor, and type of service to be delivered by the plant. This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME Therefore, this criterion is transparently set out and verifiable.
10	The included mini-hydroelectricity plant have successfully completed the quality control check	Completed quality control form with positive result for the installed systems; or evidence of procedures to record this information for plants still to be installed. This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME
11	<u>Debundling check</u> Evidence of exemption from a debundling check will be shown through each facility having a capacity less than 150 kW, or satisfy the following two conditions: not have the same activity implementer as another small scale CPA or the same CME as also manages a large scale PoA, of the same technology/measure, and if yes to the previous, the boundary of that small scale CPA or large scale PoA is not within 1 km of the boundary of the proposed small-scale CPA	An Excel calculation will be provided showing evidence of the rated capacity of the installed mini-hydroelectricity plant and demonstrating that the installed capacity of each sub-system is less than 150 kW, or for systems larger than 150 kW, evidence to fulfil the conditions described. This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME Therefore, this criterion is transparently set out and verifiable.
12	<u>Threshold check / Additionality demonstration</u> The total installed capacity of the mini-hydroelectricity plants included in the CPA is less than or equal to 15 MWe	Evidence of the number of implemented mini-hydroelectricity plants and their installed capacities from the program database is shown through an Excel Calculation. This criterion was validated by means of documents

		<p>reviewed as stated above and the interviews performed with the CME</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
13	<p><u>Additionality demonstration</u></p> <p>For mini-hydroelectricity plants, the plant provides zero-emissions electricity for rural users who did not have access to electricity prior to the project activity</p>	<p>Location information of the Mini-hydroelectricity plants in the program database, demonstrating that the recipients of electricity did not previously have access to the national grid or any regional grid.</p> <p>Written confirmation from the mini-grid operator that end-users did not have access to electricity prior to the project activity will be provided in the CPA inclusion.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
14	<p>For mini-hydroelectricity plants, the rural electrification rate in Ethiopia is less than 20% at the time of submission for inclusion of the CPA and end-users connected under the project did not have access to electricity prior to the project activity</p>	<p>The most recent available data on the electrification rates (no older than three years from the time of submission for inclusion of the CPA) shall be used to demonstrate compliance with the 20 per cent threshold.</p> <p>Written confirmation from the mini-grid operator that end-users did not have access to electricity prior to the project activity</p> <p>It will be confirmed that the end-users did not have access to any distributions/system network (national/regional grid) prior to the project activity</p> <p>This evidence will be provided in the CPA inclusion.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
15	<p><u>Crediting Period</u></p> <p>The CPA will have a renewable crediting period.</p>	<p>The type of crediting period is renewable as stated in section A.9.2</p>
16	<p><u>Public Funding</u></p> <p>The CPA will confirm that it is not receiving funding dedicated as Official Development Assistance (ODA) through a two-stage process. The first stage is a statement by the CPA Implementer if it is receiving public funding. If the CPA is receiving public funding second statement is required from the funder affirming that the public funding is not ODA</p>	<p>A statement that the activity is not receiving public funding or the public funding is not ODA is shown in Appendix 2.</p> <p>This criterion was validated by means of documents reviewed as stated above.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
17	<p><u>CME Approval</u></p> <p>The CPA will prove it has received the approval of the CME of the PoA or state the CPA Implementer and the CME are the same</p>	<p>A letter showing the CME has approved the CPA as shown or a statement given that the CPA Implementer are CME are the same.</p> <p>This criterion was validated by means of documents reviewed as stated above.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
18	<p><u>Target Group</u></p> <p>The CPA targets households and/or institutions/SMEs</p>	<p>Target groups are households and/or institutions as shown in section B.2.</p> <p>Therefore, this criterion is transparently set out and</p>

		verifiable.
19	<u>Sampling</u> The CPA will adhere to the sampling requirements stipulated by the CME in section C of the PoA-DD	Adherence to the sampling requirements of the PoA is shown in section D.7.2. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
20	<u>Stakeholder Consultation and Environmental Analysis</u> The Local Stakeholder Consultation and Environmental Impact Analysis have been conducted at the PoA level. However, in addition to each CPA considering the comments from the Stakeholder Consultation and abide by the environmental regulations of the host country, a Local Stakeholder consultation will be conducted at the CPA level as well, along with any local environmental studies required by the laws of the host country for hydropower facilities.	Local Stakeholder Consultation report and consideration of the comments from both the Local Stakeholder Consultation at the PoA level and the CPA level, and any local environmental studies required by the laws of the host country for hydropower facilities as shown in section B.1 and C.1 of the CPA. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
21	<u>Distribution</u> The CPA will use one or multiple of the following methods for distribution of appliances implemented under the CPA: <ol style="list-style-type: none"> 1. Direct sale/service to end-users 2. Bulk sales to distributors who sell on to the end user Distribution to the end-user by an organization receiving the products/measures from the CME	Description of the distribution method is provided in section A.3. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
22	<u>CER Ownership</u> The CPA will assure ownership of the CERs is secured by the CME	A statement by the CPA Implementer that it has yielded the rights to any CERs to the CME and that the CPA Implementer will ensure any distributors, manufacturers, or service providers cede their rights to the resulting CERs as well. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.

Eligibility criteria for CPAs TYPE 3

No	Eligibility criteria as set out in the PoA-DD	Means of validation/Findings/Conclusion
1	<u>Geographical boundary</u> The CPA is located entirely within the national boundaries of Ethiopia	Location information of SHS in the program database, or planned locations for systems still to be implemented as in section A.3 and A.7 of the specific CPA. This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.

		Therefore, this criterion is transparently set out and verifiable.
2	<p><u>Double-counting</u></p> <p>The SHS installed under the CPA will be uniquely identifiable, to avoid double counting through GPS coordinates of each system</p>	<p>Ownership and contact information for implementers of SHS along with identification information and GPS coordinates of the SHS system (e.g. serial number) in the program database. CPAs will provide a sample form showing the information to be collected for each system under the CPA containing the information required such as contact information, serial number, and GPS coordinates for each technology type will be provided.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
3	<p><u>Start date</u></p> <p>The start date of the CPA is on or after the start date of the PoA. The start date of the CPA is the date on which construction, implementation, or real action concerning the CPA, as shown through a contract detailing real action or an invoice for equipment</p>	<p>Sales receipt marking the first dates of sale of a SHS under the CPA. This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
4	<p><u>Methodology applicability</u></p> <p>The SHS installed under the CPA are new, renewable electricity generation systems</p>	<p>Evidence of purchase of the SHS, to demonstrate that they are new. This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
5	<p>The SHS installed under the CPA replace fossil fuel use, such as kerosene for lighting and/or fossil-fuel fired, stand-alone generators</p>	<p>For SHS, evidence that end-users in the region of installation relied primarily on fossil fuel for lighting. This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
6	<p>The end-users of the electricity generated by the CPA did not have access to a national or regional grid before implementation of the SHS</p>	<p>Written agreement with the POs specifying that they pursue SHS sales only in 1) geographical areas outside the grid electrification plan of Ethiopia Electric Power Corporation (EEPCO); (2) remote households not qualified for grid electrification services by EEPCO; (3) isolated pocket areas, etc.; and (4) institutions for whom grid connection is prohibitively expensive. This criterion was validated by</p>

		<p>means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
7	At least 75% of the end-users that receive electricity from systems installed under the CPA are households	<p>Ownership and contact information for recipients of SHSs; or evidence of procedures to record this information for systems still to be implemented.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
8	End-users who utilize electricity for lighting employ only high efficient lighting equipment such as Compact Fluorescent Lamps (CFLs), Light Emitting Diode (LED) lamps, and/or fluorescent lamps	<p>For SHSs, technical description of the systems implemented including lighting type installed.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
9	<p><u>Monitoring plan applicability</u></p> <p>The capacity of each project renewable electricity generation system is equal to or less than 1.0 kW (1000 W)</p>	<p>Evidence of the rated capacity of the installed SHS, to demonstrate that installed capacity of each is less than 1.0 kW.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
10	<p><u>Technology</u></p> <p>Type & level of service check for the SHS</p>	<p>The lighting services installed with the SHS must provide more than 12.8 lumens of light, equivalent to the average light output of simple wick kerosene lamps per household in the existing scenario.</p> <p>This criterion was validated by means of documents reviewed as stated above.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
11	The included SHSs have successfully completed the quality control check demonstrating that they comply with applicable international standards or comparable national, regional or local standards/guidelines, which are indicated in the CPA-DD	<p>Completed quality control form with positive result for the installed systems; or evidence of procedures to record this information for plants still to be installed.</p> <p>This criterion was validated by means of documents reviewed as stated above and the interviews performed with the CME.</p> <p>Therefore, this criterion is</p>

		transparently set out and verifiable.
12	<u>Debundling check</u> Evidence that each SHS has a rated capacity less than 150 kW will be used to show exemption from a debundling check	An Excel Calculation will be provided showing the rated capacity of the installed Institutional solar PV plant, to demonstrate that installed capacity of each is less than 150 kW, or for systems larger than 150 kW, evidence to fulfil the conditions described. This criterion was validated by means of documents reviewed as stated above Therefore, this criterion is transparently set out and verifiable.
13	<u>Threshold check / Additionality demonstration</u> The total installed capacity of the SHSs included in the CPA is less than or equal to 15 MWe	Evidence of the number of implemented SHSs and their installed capacities from the program database is shown through an Excel Calculation. This criterion was validated by means of documents reviewed as stated above Therefore, this criterion is transparently set out and verifiable.
14	<u>Additionality demonstration</u> For SHSs, the technology(ies) installed under the CPA pertain to Solar technologies (photovoltaic and solar thermal electricity generation)	SHS technical information showing that they encompass a solar photovoltaic system is shown. This criterion was validated by means of documents reviewed as stated above Therefore, this criterion is transparently set out and verifiable.
15	<u>Crediting Period</u> The CPA will have a renewable crediting period.	The type of crediting period is renewable as shown in section A.9.2. This criterion was validated by means of documents reviewed as stated above Therefore, this criterion is transparently set out and verifiable.
16	<u>Public Funding</u> The CPA will confirm that it is not receiving funding dedicated as Official Development Assistance (ODA) through a two-stage process. The first stage is a statement by the CPA Implementer if it is receiving public funding. If the CPA is receiving public funding second statement is required from the funder affirming that the public funding is not ODA	A statement that the activity is not receiving public funding or the public funding is not ODA is shown in Appendix 2. This criterion was validated by means of documents reviewed as stated above Therefore, this criterion is transparently set out and verifiable.
17	<u>CME Approval</u> The CPA will prove it has received the approval of the CME of the PoA or state the CPA Implementer and the CME are the same	A letter showing the CME has approved the CPA or a statement that the CME and CPA Implementer are the same. This criterion was validated by

		<p>means of documents reviewed as stated above</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
18	<p><u>Target Group</u> The CPA targets households</p>	<p>Target groups are households as shown in section B.2. This criterion was validated by means of documents reviewed as stated above</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
19	<p><u>Sampling</u> The CPA will adhere to the sampling requirements stipulated by the CME in section C of the PoA-DD</p>	<p>Adherence to the sampling requirements of the PoA is shown in section D.7.2. This criterion was validated by means of documents reviewed as stated above</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
20	<p><u>Stakeholder Consultation and Environmental Analysis</u> The Local Stakeholder Consultation and Environmental Impact Analysis have been conducted at the PoA level. Each CPA will take into consideration the comments from the Stakeholder Consultation and abide by the environmental regulations of the host country</p>	<p>Consideration of the comments from Local Stakeholder Consultation, and a statement that the CPA will adhere to the environmental regulations of the host country as shown in section B.1 and C.1 of the CPA. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.</p>
21	<p><u>Distribution</u> The CPA will use one or multiple of the following methods for distribution of appliances implemented under the CPA:</p> <ol style="list-style-type: none"> 1. Direct sale/service to end-users 2. Bulk sales to distributors who sell on to the end user <p>Distribution to the end-user by an organization receiving the products/measures from the CME</p>	<p>Description of the distribution method is provided in section A.3. This criterion was validated by means of documents reviewed as stated above.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
22	<p><u>CER Ownership</u> The CPA will assure ownership of the CERs is secured by the CME</p>	<p>A statement by the CPA Implementer that it has yielded the rights to any CERs to the CME and that the CPA Implementer will ensure any distributors, manufacturers, or service providers cede their rights to the resulting CERs as well. This criterion was validated by means of documents reviewed as stated above.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>

Eligibility criteria for CPAs TYPE 4

No	Eligibility criteria as set out in the PoA-DD	Means of validation/Findings/Conclusion
1	<p><u>Geographical boundary</u> The CPA is located entirely within the national boundaries of Ethiopia</p>	<p>Location information of Mini-hydroelectricity plants in the program database, or planned locations for systems still to be implemented as in section A.3 and A.7 of the specific CPA. This criterion was validated by means of documents reviewed as stated above.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
2	<p><u>Double-counting</u> The Mini-hydroelectricity plants installed under the CPA will be uniquely identifiable, to avoid double counting through GPS coordinates of each plant installed</p>	<p>Ownership and contact information for implementers of Mini-hydroelectricity plants along with identification information and GPS coordinates of the system (e.g. serial number) in the program database; or evidence of procedures to record this information for systems still to be implemented. CPAs will provide a sample form showing the information to be collected for each system under the CPA containing the information required such as contact information and GPS coordinates. Therefore, this criterion is transparently set out and verifiable.</p>
3	<p><u>Start date</u> The start date of the CPA is on or after the start date of the PoA. The start date of the CPA is the date on which real action concerning the CPA, as shown through a contract for equipment or construction</p>	<p>Contract showing procurement of equipment or construction services concerning the CPA. This criterion was validated by means of documents reviewed as stated above.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
4	<p><u>Methodology applicability</u> As per AMS-I.L, the mini-hydroelectricity plants installed under the CPA are new, renewable electricity generation systems</p>	<p>Evidence of purchase of the mini-hydroelectricity plants, to demonstrate that they are new. This criterion was validated by means of documents reviewed as stated above.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
5	<p>The mini-hydroelectricity plants installed under the CPA replace fossil fuel use, such as kerosene for lighting and/or fossil-fuel fired, stand-alone generators</p>	<p>For mini-hydroelectricity plant, diagnostic analysis or feasibility assessment showing the existing energy source of its users. This criterion was validated by means of documents reviewed as stated above.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
6	<p>The end-users of the electricity generated by the CPA did not have access to a national or regional grid before implementation of the mini-hydroelectricity plants</p>	<p>Written agreement with the POs specifying that they pursue mini-hydroelectricity plants only in 1) geographical areas outside the grid electrification plan of Ethiopia Electric Power Corporation (EEPCO); (2) remote households not qualified for grid electrification services by EEPCO; (3) isolated pocket areas, etc.; and (4) institutions for whom grid connection is prohibitively expensive. This criterion was validated by means of documents reviewed as stated above.</p>

		Therefore, this criterion is transparently set out and verifiable.
7	At least 75% of the end-users that receive electricity from systems installed under the CPA are households	Information on electricity end-users for Mini-hydroelectricity plants; or evidence of procedures to record this information for systems still to be implemented. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
8	End-users who utilize electricity for lighting employ only high efficient lighting equipment such as Compact Fluorescent Lamps (CFLs), Light Emitting Diode (LED) lamps, and/or fluorescent lamps	For Mini-hydroelectricity plants, evidence of the type of lighting employed by end-users via contractual arrangements, direct observation, or etc. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
9	<u>Technology</u> Type & level of service check for the mini-hydroelectricity plant	Technical specifications showing the capacity, estimated capacity factor, and type of service to be delivered by the plant. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
10	The included mini-hydroelectricity plants have successfully completed the quality control check demonstrating that they comply with applicable international standards or comparable national, regional or local standards/guidelines, which are indicated in the CPA-DD	Completed quality control form with positive result for the installed systems; or evidence of procedures to record this information for plants still to be installed This criterion was validated by means of documents reviewed as stated above. The applicable standard listed in the CPA-DD
11	<u>Debundling check</u> The CPA will show it is exempt from a debundling check by showing that each mini-hydroelectricity plant shall either have a rated capacity less than 150 kW, or satisfy the following two conditions: not have the same activity implementer as another small scale CPA or the same CME as also manages a large scale PoA, of the same technology/measure, and if yes to the previous, the boundary of that small scale CPA or large scale PoA is not within 1 km of the boundary of the proposed small-scale CPA	An Excel Calculation showing evidence of the rated capacity of the installed mini-hydroelectricity plant and demonstrating that the installed capacity of each sub-system is less than 150 kW, or for systems larger than 150 kW, evidence to fulfil the conditions described. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
12	<u>Threshold check / Additionality demonstration</u> The total installed capacity of the mini-hydroelectricity plants included in the CPA is less than or equal to 15 MWe	Evidence of the number of implemented mini-hydroelectricity plants and their installed capacities from the program database and is shown in an Excel Calculation. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
13	<u>Additionality demonstration</u> For mini-hydroelectricity plants, the plant provides zero-emissions electricity for rural	Location information of the Mini-hydroelectricity plants in the program database, demonstrating that the recipients of electricity did not previously have access to the

	users who did not have access to electricity prior to the project activity	national grid or any regional grid. Written confirmation from the mini-grid operator that end-users did not have access to electricity prior to the project activity will be provided in the CPA inclusion. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
14	For mini-hydroelectricity plants, the rural electrification rate in Ethiopia is less than 20% at the time of submission for inclusion of the CPA and end-users connected under the project did not have access to electricity prior to the project activity	The most recent available data on the electrification rates (no older than three years from the time of submission for inclusion of the CPA) shall be used to demonstrate compliance with the 20 per cent threshold. Written confirmation from the mini-grid operator that end-users did not have access to electricity prior to the project activity will be provided in the CPA inclusion. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
15	<u>Crediting Period</u> The CPA will have a renewable crediting period.	The type of crediting period is renewable as stated in section A.9.2 of the CPA This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
16	<u>Public Funding</u> The CPA will confirm that it is not receiving funding dedicated as Official Development Assistance (ODA) through a two-stage process. The first stage is a statement by the CPA Implementer if it is receiving public funding. If the CPA is receiving public funding second statement is required from the funder affirming that the public funding is not ODA	A statement that the activity is not receiving public funding or the public funding is not ODA is shown in Appendix 2. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
17	<u>CME Approval</u> The CPA will prove it has received the approval of the CME of the PoA or state the CPA Implementer and the CME are the same	A letter showing the CME has approved the CPA or a statement in section E that the CME and CPA Implementer are the same. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
18	<u>Target Group</u> The CPA targets households and/or institutions/SMEs	Target groups are households and/or institutions as shown in section B.2
19	<u>Sampling</u> The CPA will adhere to the sampling requirements stipulated by the CME in section C of the PoA-DD	Adherence to the sampling requirements of the PoA is shown in section D.7.2. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
20	<u>Stakeholder Consultation and Environmental Analysis</u> The Local Stakeholder Consultation and Environmental Impact Analysis have been	Local Stakeholder Consultation report and consideration of the comments from both the Local Stakeholder Consultation at the PoA level and the CPA level, and any local environmental studies required by the laws of the

	conducted at the PoA level. However, in addition to each CPA considering the comments from the Stakeholder Consultation and abide by the environmental regulations of the host country, a Local Stakeholder consultation will be conducted at the CPA level as well, along with any local environmental studies required by the laws of the host country for hydropower facilities.	host country for hydropower facilities as shown in section B.1 and C.1 of the CPA. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
21	<u>Distribution</u> The CPA will use one or multiple of the following methods for distribution of appliances implemented under the CPA: 1. Direct sale/service to end-users 1. Bulk sales to distributors who sell on to the end user Distribution to the end-user by an organization receiving the products/measures from the CME	Description of the distribution method is provided in section is provided in section A.3. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
22	<u>CER Ownership</u> The CPA will assure ownership of the CERs is secured by the CME	A statement by the CPA Implementer that it has yielded the rights to any CERs to the CME and that the CPA Implementer will ensure any distributors, manufacturers, or service providers cede their rights to the resulting CERs as well. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.

Eligibility criteria for CPAs TYPE 5

No	Eligibility criteria as set out in the PoA-DD	Means of validation/Findings/Conclusion
1	<u>Geographical boundary</u> The CPA is located entirely within the national boundaries of Ethiopia	Location information of solar pump systems in the program database, or planned locations for systems still to be sold as in section A.3 and A.7 of the specific CPA. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
2	<u>Double-counting</u> The solar pump systems sold under the CPA will be uniquely identifiable, to avoid double counting through GPS coordinates of each system	Ownership and contact information for recipients of solar pump systems along with identification information and the GPS coordinates of the system (e.g. serial number) of the solar pump systems in the program database; or evidence of procedures to record this information for systems still to be implemented. CPAs will provide a sample form showing the information to be collected for each system under the CPA containing the information required such as contact information, serial number, and GPS coordinates for each technology type. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and

		verifiable.
3	<p><u>Start date</u> The start date of the CPA is on or after the start date of the PoA. The start date of the CPA is the date on which construction, implementation, or real action concerning the CPA, as shown through a contract detailing real action or an invoice for equipment</p>	<p>Receipt of sale showing the date of sale of the first solar pump systems in the program database.</p> <p>This criterion was validated by means of documents reviewed as stated above.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
4	<p><u>Methodology applicability</u> As per AMS-I.B, for cases where a fossil-fuel fired irrigation pump system is replaced or retrofitted, the existing system does not have a renewable component</p>	<p>For cases of replacement or retrofit, diagnostic analysis or feasibility assessment for the solar pump system showing the existing energy source displaced.</p> <p>This criterion was validated by means of documents reviewed as stated above.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
5	For cases where the solar pump system is new, the most likely baseline scenario is a fossil-fuel fired pump system	<p>Demonstration that fossil-fuel fired pump systems are the most commonly installed under similar circumstances and the additionality of solar pump systems.</p> <p>This criterion was validated by means of documents reviewed as stated above.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
6	The total installed capacity of the solar pump systems included in the CPA is less than or equal to 15 MW	<p>Evidence of the number of implemented solar pump systems and their installed capacities (if available) from the program database, or alternately their equivalent diesel-based electricity generating capacity required to provide the same service as the project pump.</p> <p>This criterion was validated by means of documents reviewed as stated above.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
7	For cases where an existing pump is replaced, the operating characteristics (head v/s discharge and efficiency) of the new pump is similar to or better than the system being replaced	<p>For cases of pump replacement, diagnostic analysis or feasibility assessment for the solar pump system showing the characteristics of the existing pump displaced, and those of the new pump.</p> <p>This criterion was validated by means of documents reviewed as stated above.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
8	For cases where an existing water distribution system is replaced or modified, the distribution efficiency of the new distribution system is similar to or better than the system being replaced	<p>For cases of water distribution system replacement, diagnostic analysis or feasibility assessment for the solar pump system showing the characteristics of the existing distribution system displaced, and those of the new distribution system.</p> <p>This criterion was validated by means of documents reviewed as stated above.</p> <p>Therefore, this criterion is transparently set out and verifiable.</p>
9	<p><u>Technology</u> Type & level of service check for the solar pump system</p>	<p>Technical specifications showing the capacity, estimated capacity factor, and type of service to be delivered by the pumps.</p> <p>This criterion was validated by means of documents reviewed as stated above.</p>

		Therefore, this criterion is transparently set out and verifiable.
10	The included solar pump systems have successfully completed the quality control check	Completed quality control form with positive result for the installed systems; or evidence of procedures to record this information for systems still to be installed. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
11	<u>Debundling check</u> The CPA will show it is exempt from a debundling check by showing that each solar pump system shall have a rated capacity less than 150 kW.	An Excel Calculation will show the rated capacity or equivalent diesel capacity of the installed solar pump systems is less than 150 kW. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
12	<u>Additionality demonstration</u> The technology(ies) installed under the CPA pertain to Solar technologies (photovoltaic and solar thermal electricity generation)	Solar pump system technical information showing that they encompass a solar photovoltaic system is shown in an Excel Calculation. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
13	<u>Crediting Period</u> The CPA will have a renewable crediting period.	The type of crediting period is renewable as shown in section A.9.2. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
14	<u>Public Funding</u> The CPA will confirm that it is not receiving funding dedicated as Official Development Assistance (ODA) through a two-stage process. The first stage is a statement by the CPA Implementer if it is receiving public funding. If the CPA is receiving public funding second statement is required from the funder affirming that the public funding is not ODA	A statement that the activity is not receiving public funding or the public funding is not ODA is shown in Appendix 2. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
15	<u>CME Approval</u> The CPA will prove it has received the approval of the CME of the PoA or state the CPA Implementer and the CME are the same	A letter showing the CME has approved the CPA or a statement in section E that the CME and CPA Implementer are the same. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
16	<u>Target Group</u> The CPA targets households or institutions/SMEs	Target groups are households or institutions as shown in section B.2. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.

17	<u>Sampling</u> The CPA will adhere to the sampling requirements stipulated by the CME in section C of the PoA-DD	Adherence to the sampling requirements of the PoA is shown in section D.7.2 This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
18	<u>Stakeholder Consultation and Environmental Analysis</u> The Local Stakeholder Consultation and Environmental Impact Analysis have been conducted at the PoA level. Each CPA will take into consideration the comments from the Stakeholder Consultation and abide by the environmental regulations of the host country	Consideration of the comments from Local Stakeholder Consultation, and a statement that the CPA will adhere to the environmental regulations of the host country as shown in section B.1 and C.1 of the CPA. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
19	<u>Distribution</u> The CPA will use one or multiple of the following methods for distribution of appliances implemented under the CPA: 1. Direct sale/service to end-users 4. Bulk sales to distributors who sell on to the end user Distribution to the end-user by an organization receiving the products/measures from the CME	Description of the distribution method is provided in section A.3. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.
20	<u>CER Ownership</u> The CPA will assure ownership of the CERs is secured by the CME	A statement by the CPA Implementer that it has yielded the rights to any CERs to the CME and that the CPA Implementer will ensure any distributors, manufacturers, or service providers cede their rights to the resulting CERs as well. This criterion was validated by means of documents reviewed as stated above. Therefore, this criterion is transparently set out and verifiable.

During validation activities one finding was raised regarding the eligibility criteria:

CAR 3-The criteria of eligibility are not complete. The eligibility criteria shall be developed and updated in accordance with:

Conditions that avoid double counting of emission reductions like unique identifications of product and end-user locations (e.g. programme logo): The PP has to provide the way to clear how the systems are included in the PoA, such as logo, stickers, public database, etc.

The PP is kindly requested to provide for each criteria, the files, evidence, documents, etc, that will be used to demonstrate that the criteria is met.

The requested documents were provided, therefore, CAR was clarified and it is considered that all the eligibility criteria are supported with documented evidence. Hence, based on the aforementioned approach, AENOR confirms that the eligibility criteria including additionality are appropriately in accordance with the eligibility criteria listed in PoA-DD.

SECTION C. Management system

Means of validation	<p>Management structure of the monitoring plan is defined in Section C of the POA-DD. Operational management and verification plan in the final PoA-DD is assessed to be appropriate for the purpose of the programme monitoring. The overall responsibility for the monitoring will be held by Development Bank of Ethiopia (DBE), the Managing Entity.</p> <p>Other organizations may act as CPA Implementers for the implementation of the individual activities. The planned management systems are similar for the CPAs under the PoA. However some differences exist between CPAs encompassing solar technologies (solar lamps, SHS, and solar PV plants), CPAs encompassing mini-hydroelectricity plants, and for the CPAs including solar pumps for irrigation. All CPAs under the PoA have the following roles and responsibilities in common;</p> <p>For all CPAs under the PoA, at the time of renewal of the crediting period for a CPA Type the CME will ensure that all methodologies applied by the CPAs are still valid, i.e. the latest version of the methodology is applied. If the methodology applied in the previous crediting period was withdrawn or has been replaced by a consolidate methodology, the CME shall use the valid version of the methodology, i.e. the consolidated version of the methodology, if applicable, or the previous version of the methodology.</p> <p>Project participants may at any time request the removal of a CPA under the PoA. CPAs removed from the PoA cannot be added back to the PoA.</p> <p>The Management System has been developed in accordance with requirements stated in paragraph 21 of “Standard for Demonstration of Additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities” a the detail of each role and responsibility is clearly included in section C of the POA-DD. Phases of propagation, operation, CPA inclusion and CPA monitoring are forecasted and clearly detailed in the POA-DD. The CME will develop and implement QA/QC procedures.</p>
Findings	<p>CAR 4: Provisions for meeting training and maintenance needs shall be included in the SSC-PoA-DD</p> <p>CAR 7: The date and the responsible of the baseline and monitoring settling should be updated. This section refers to the completion of the baseline of the POA-DD.</p>
Conclusion	<p>In AENOR’s opinion, the management plan included in section C of the POA-DD clearly details the roles and responsibilities of each of the activities involved in the monitoring, the arrangements for training and capacity development for personnel are detailed as well, a procedure for technical review of inclusion of CPAs and to avoid double counting is prepared and measures for control documentation and continuous improvement are prepared , it is considered that the management plan is developed in accordance with paragraph 21 of the “Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities Standard”.</p>

SECTION D. Duration of the PoA

Means of validation	<p>The start date and the length of the PoA has been assessed through desk review, and against the UNFCCC webpage, and it is confirmed that PoA start date is 23/12/2014 corresponding to the start date of the global stakeholder consultation. This date has been stated in accordance with paragraph 222 (b) of the CDM project Standard.</p>
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	On the other hand, the length of the POA is 28 years, in accordance also with paragraph 223 of the CDM Project Standard
Findings	No finding has been raised regarding the duration of the POA.
Conclusion	The start dates of the Programme of Activities and its length have been correctly stated in the POA-DD in accordance with the paragraphs 222 and 223 of the CDM Project Standard.

SECTION E. Environmental impacts

Means of validation	<p>The analysis of environmental impacts is established at the PoA level. The Ethiopia Off-Grid Renewable Energy Program (the PoA) is a nation-wide program for Ethiopia that targets the large segment of the population without access to electricity for basic uses. For this PoA-DD, it is not required to undertake an Environmental Impact Assessment according to Ethiopian environmental law /21/.</p> <p>During the on site visit, the validation team checked the positive impacts of the solar lamps. No negative boundary or transboundary impacts were identified and as a whole the activities under the PoA will benefit the environment and contribute to the sustainable development of the host country/countries. The EIA waiver /22/ has been provided to the audit team and information is consistent</p> <p>Documentation was provided to the validation team, and all of them were in accordance with provisions detailed in the POA-DD and the national regulation as well.</p>
Findings	CL 4- Letter from Ethiopia's Environmental Authority has to be included Appendix 4.
Conclusion	<p>It can be concluded that the PPs have followed a correct analysis of environmental impacts in accordance with procedures as required by the host party.</p> <p>In addition, AENOR confirms that the host party's DNA confirmed the project's contribution to the sustainable development of Ethiopia during the on site visit and through the approval letter.</p>

SECTION F. Local stakeholder consultation

Means of validation	<p>Comments from local stakeholders are solicited at the PoA level to ensure comments/concerns from all regions covered by the PoA are included at the time of registration.</p> <p>A Local Stakeholder Consultation meeting was held in order to give stakeholders an opportunity to provide comments and inputs for the proposed programme. The meeting was held on November 26th 2014 at the Elilly Hotel in Addis Ababa and the report /23/ has been provided to the audit team.</p> <p>Comments from stakeholders unable to attend the meeting were also invited by email and telephone as per the newspaper announcement, email invitations and the hand delivered invitations.</p> <p>A total of 58 people participated in the stakeholder consultation meeting. Participants included NGOs, community representatives, the private sector, the media, research institutions, representatives of other efficient cooking stove projects, and members of the general public.</p> <p>A summary of the comments received and proposed consideration of the comments has been included in the POA-DD. A complete list of attendees and comments is shown in the Local Stakeholder Consultation (LSC) report</p>
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Findings	CI 5- It should be clarified if stakeholder consultations process it is required for mini hydroelectricity plants.
Conclusion	The local stakeholder consultation is carried out at PoA level. By means of documents reviewed and the interviews performed, AENOR considers that the summary of the comments received during the consultation process, along with the PPs responses included in section F.2 of the POA-DD is complete.

SECTION G. Approval and authorization

Means of validation	<p>Two parties are involved in the Programme of Activities entitled: "Ethiopia Off-Grid Renewable Energy Program", Federal Democratic Republic of Ethiopia (host) and Sweden.</p> <p>The Letter of Approval from the DNA of Ethiopia has been provided to the validation team directly by the project participants. The LoA was issued on 16 November 2015 (No. 13/4.1/1896 by the Ministry of Environment; Forest and Climate Change. AENOR confirms that the LoA states the following:</p> <ul style="list-style-type: none"> • The Federal Democratic Republic of Ethiopia has ratified the Kyoto Protocol in February, 2005. • The POA is in line with the national development objectives of Ethiopia. • The Federal Democratic Republic of Ethiopia voluntarily participates in the CDM and confirms that the Programme "Ethiopia Off-Grid Renewable Energy Program" contributes to Ethiopia's sustainable development and the voluntary participation of Development Bank of Ethiopia as project participant. • The LoA refers to the precise proposed CDM programme of Activities title in the PoA-DD being submitted for registration. <p>AENOR confirms that the LoA from Ethiopia has been issued by the respective party designated national authority and does not doubt the authenticity of the letter of approval received from the PPs. In addition, the validation team of AENOR visited the DNA of Ethiopian which confirmed that the LoA will be issued for the proposed PoA.</p> <p>The Letter of Approval from the DNA of Sweden has been provided to the validation team directly by the project participants. The LoA was issued on 29 February 2016 AENOR confirms that the LoA states the following:</p> <ul style="list-style-type: none"> • Sweden has ratified the Kyoto Protocol in May, 2002. • Sweden voluntarily participates in the PoA and confirms the voluntary participation of International Bank for Reconstruction and Development (IBRD) as trustee of the Carbon Initiative for Development (Ci-Dev) as project participant. • The LoA refers to the precise proposed CDM programme of Activities title in the PoA-DD being submitted for registration. <p>AENOR confirms that the LoA from Sweden has been issued by the respective party designated national authority and does not doubt the authenticity of the letter of approval received from the PPs.</p> <p>The validation did not reveal any information that indicates that the programme can</p>
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	<p>be seen as a diversion of ODA funding towards Ethiopia and Sweden.</p> <p>The PoA CME (Coordinating and Managing Entity) is Development Bank of Ethiopia, which is authorized as Programme Participant and authorized by the host Party Ethiopian DNA, as the Coordinating and Managing Entity.</p> <p>The other programme participant is International Bank for Reconstruction and Development (IBRD) as the Trustee of the Carbon Initiative for Development who is authorized by the Government of Sweden.</p> <p>All project participants have been listed in section A.4 of the final PoA-DD. Information regarding project participants is confirmed as consistent in the latest PoA-DD. AENOR confirms that no entities other than those approved as project participants are included in the final PoA-DD.</p>
Findings	CAR 1 - Letter of Approval from Ethiopia shall be provided to the validation team.
Conclusion	<p>AENOR confirms that two Parties are involved in the Programme of Activities entitled: "Ethiopia Off-Grid Renewable Energy Program", Federal Democratic Republic of Ethiopia (host) and the Government of Sweden.</p> <p>International Bank for Reconstruction and Development (IBRD) as trustee of the Carbon Initiative for Development (Ci-Dev) who will be authorized by the Government of Sweden, and Development Bank of Ethiopia who is authorized by the DNA of Ethiopia.</p> <p>The LoA from Ethiopia and Sweden have been obtained, and they confirm that:</p> <ul style="list-style-type: none"> • Ethiopia and Sweden are party to the Kyoto protocol; • CDM is a voluntary participation; • the programme under validation will contribute to the sustainable development of Ethiopia; • the programme title is in line with the title mentioned under the title page of POA-DD. <p>Therefore, AENOR confirms that LoAs have been verified to be unconditional with respect to all the above confirmed aspects.</p> <p>The validation team confirms that the Letters of Approval meet the requirement of paragraphs 44-48 of CDM Validation and Verification Standard (version 09).</p>

SECTION H. Global stakeholder consultation

Means of validation	<p>According to Decision 3/CMP.1, the DOE shall make the PoA-DD and specific CPA-DD publicly available and receive comments on the validation requirements from parties, stakeholders and UNFCCC accredited NGOs within 30 days, and make them publicly available.</p> <p>AENOR published the project document on CDM website (http://unfccc.cdm.int) on 23/12/2014 and invited comments by Parties, stakeholders and non-governmental organizations. No comments were received.</p>
Findings	No finding has been raised.
Conclusion	In accordance with paragraph 39 of the CDM Validation and Verification Standard, PoA-DD and specific CPA-DD have been made publicly available for global stakeholder consultation in accordance with the Project cycle procedure.

	No comments were received.
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SECTION I. Contribution to sustainable development

Means of validation	Letter of Approval of Federal Democratic Republic of Ethiopia has been obtained from the DNA of Ethiopia, and it confirms that the DNA has considered whether the proposed CDM PoA will assist the host Party in achieving sustainable development.
Findings	No finding has been raised.
Conclusion	The validation team confirms that the host Party's DNA has set the contribution of the Programme of Activities to the sustainable development of the host Party. The LoA from the host party's DNA has confirmed the contribution of the programme to the sustainable development and the validity of the LoA has been cross checked by the validation team (refer section G of this validation report). The validation team confirms that the proposed Programme of Activity meets the requirement of paragraphs 57 of CDM Validation and Verification Standard.

SECTION J. Modalities of communication

Means of validation	In accordance with paragraph 60 of the CDM Validation and Verification Standard, the DOE has validated that the corporate identity of all project participants, the coordinating/managing entity and focal points included in the Modalities of Communication (MoC) statement, as well as the personal identities.
Findings	No finding has been raised.
Conclusion	<p>AENOR confirms that the corporate identity of all project participants and focal points included in the Modalities of Communication (MoC) statement, as well as the personal identities, including specimen signatures and employment status, of their authorized signatories, included in the written confirmation; are valid and accurate.</p> <p>AENOR, also confirms that the MoC statement complies with all relevant forms and requirements. Thus:</p> <p>The valid version of the form "Modalities of Communication Statement" (F-CDM-MOC) has been used.</p> <p>The information required as per the F-CDM-MOC, including its annex 1, is correctly completed.</p> <p>The project participant's authorised signatories signing the F-CDM-MOC correspond to the project participant's authorised signatories included in F-CDM-MOC, annex 1.</p>

PART II. Generic component project activity(ies)**SECTION A. General description of generic CPA. Type 1**

Means of validation	The general description of generic CPA type 1 has been included in Part II of the POA-DD. It has been crosschecked against the description of the Programme and the <i>Instructions for filling out the programme design document form for small-scale</i>
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	<p><i>CDM programme of activities.</i></p> <p>The CPA targets poor and vulnerable households mainly in rural areas, who rely primarily on fossil fuels for lighting, and provides improved energy access to such households, with associated benefits for poverty alleviation, while simultaneously reducing greenhouse gas emissions from the exploitation of fossil fuels. This CPA includes the distribution of solar lamp/lanterns that provide lighting powered by solar energy, for households or other end-users in Ethiopia.</p> <p>The general description of Generic CPA is transparent, consistent and appropriate.</p>
Findings	No finding has been raised.
Conclusion	AENOR confirms that the generic CPA-DD has been prepared for each technology/measure, and the methodology in accordance with the relevant requirements in the Project standard.

SECTION B. Application of a baseline and monitoring methodology and standardized baseline

B.1. Applicability of selected methodology(ies) and/or standardized baseline

Means of validation	<p>The CPA under the PoA will implement the following methodology. The technology will be implemented independently, without overlap among individual users. The technology will be applied as follows:</p> <p>1) Methodology: AMS-III.AR. Substituting fuel based lighting with LED/CFL lighting systems, Version 5.0</p> <ul style="list-style-type: none"> ➤ Replacement of fossil fuel based lamps with LED or CFL lighting systems charged by solar power <p>Main components: stand-alone, rechargeable off-grid lighting products or systems Measure: switch of technology with change of energy source Type III - Other Project Activities Sectoral Scope: 1, Energy industries (renewable - / non-renewable sources) Technologies: Solar lamps / solar lanterns</p> <p>The applicability conditions of the methodology are detailed in Section B of CPA generic type 1 description included in the POA-DD.</p>
Findings	<p>CAR 5: The version of the methodologies should be updated to the most recent ones.</p> <p>CAR 6: Provisions regarding the updating of the CPAs in case of held or withdrawal of the methodologies shall be taken into account in the PoA-DD</p>
Conclusion	The applicability criteria of the baseline methodology have been transparently detailed in section B of the generic CPA detailed in the final version of the POA-DD. The consideration of the leakages, the boundaries of the CPA and the calculations are in accordance with the provisions of the relevant methodology and support documentation provided. The guidelines for the application of the methodology in the PoA have been clearly detailed for this type of CPA.

B.1.1. Deviation from methodology

Means of validation	Not applicable since no deviation from the methodology has been detected.
Findings	Not applicable since no deviation from the methodology has been detected.
Conclusion	Not applicable since no deviation from the methodology has been detected.

B.1.2. Clarification on applicability of methodology, tool and/or standardized baseline

Means of validation	Not applicable since no clarification on applicability of methodology or tool has been detected.
Findings	Not applicable since no clarification on applicability of methodology or tool has been detected.
Conclusion	Not applicable since no clarification on applicability of methodology or tool has been detected.

B.2. Sources and GHGs

Means of validation	<p>Section B.3 details the gases and sources included in the CPA boundary which have been stated in accordance with the applied methodology.</p> <p>For solar lamps, the project boundary includes the physical, geographical site of the renewable energy system, both the project lamp and the charging system; in other words, the locations of the solar lamps under the CPA.</p>
Findings	No finding has been raised.
Conclusion	<p>The physical delineation of the CPA under the PoA and the description of the emission sources and GHGs that are included in the CPA boundary are appropriate for the purpose of calculating project and baseline emissions for the CPA.</p> <p>In addition, all emission sources and GHGs related included and excluded from the project boundary are clearly identified and described in a complete manner in the latest version of generic part the PoA-DD.</p> <p>The validation team states that the identified boundary and the selected sources and gases are correctly justified by the project proponent in the PoA-DD, and they are in accordance with the applied methodology. Hence, the validation team confirms the Programme of Activities is validated in accordance with paragraph 91 of CDM Validation and Verification Standard.</p>

B.3. Description of baseline scenario

Means of validation	<p>The description of the baseline scenario has been stated in section B.4 of generic CPA type 1 detailed in the POA-DD and it has been crosschecked against the applied methodology.</p> <p>According to AMS-III.AR Version 5, the baseline is assumed to be the use of kerosene lamps to provide an existing level of lighting.</p>
Findings	No finding has been raised.
Conclusion	The method used to calculate the baseline for the CPA is established according to the small scale methodology AMS-III.AR and the referred POA. The baseline identified for the CPA is the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the CPA.

B.4. Demonstration of eligibility for a generic CPA

No.	Eligibility criteria as set out in the PoA-DD	Means for assessment of inclusion of CPA	Means of validation/Findings/Conclusion
1	<u>Geographical boundary</u>	Location information of	This information will be included in

	The CPA is located entirely within the national boundaries of Ethiopia	recipients of solar lamps in the program database, or planned locations for systems still to be sold as in section A.3 and A.7 of the specific CPA.	section A.3 and A.7 of the specific CPA. Therefore, this criterion is clearly set out in accordance with paragraph 18 (a) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities
2	<u>Double-counting</u> The solar lamps sold under the CPA will be uniquely identifiable, to avoid double counting through a unique serial number clearly visible on each lamp under the CPA	Conformation that ownership and contact information for recipients of solar lamps along with the recording of the unique serial number of the solar lamp purchased by the customer will be collected in the program database. An image of the unique serial number(s) for each technology type will be provided.	A program database and an image of the unique serial number(s) for each technology type will be provided. Therefore, this criterion is clearly set out and it is verifiable.
3	<u>Start date</u> The start date of the CPA is on or after the start date of the PoA. The start date of the CPA is the date on which construction, implementation, or real action concerning the CPA, as shown through a contract detailing real action or an invoice for equipment	Sales receipt or wholesale purchase with the date of sale/purchase of the first lamp under the CPA.	Sales receipt or wholesale purchase with the date of sale/purchase of the first lamp under the CPA will be provided. Furthermore, this criterion is clearly set out in accordance with paragraph 18 (d) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities
4	<u>Methodology applicability</u> Project lamps' batteries are charged using a renewable energy system included as part of the project lamp	Solar lamp technical information showing that the charging relies on a photovoltaic system is shown in section A.5 of the specific CPA.	Section A.5 of the specific CPA will include this information. Therefore, this criterion is clearly stated in accordance with paragraph 18 (e) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities
5	The project lamps use a replaceable, chargeable battery	Solar lamp technical information showing that the battery is replaceable and chargeable is shown in section A.5 of the specific CPA	Section A.5 of the specific CPA will include this information. Therefore, this criterion is clearly stated in accordance with paragraph 18 (e) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities
6	Project lamps shall have a warranty of a minimum of one year from the time the end-user takes ownership or begins using the lamp. At a	Solar lamps warranty provisions is shown in section A.5 of the specific CPA	Section A.5 of the specific CPA will include this information. Therefore, this criterion is clearly stated in accordance with paragraph 18 (e) of the Standard: Demonstration

	minimum, the warranty shall cover free replacement or repair of any failed lamps, batteries and where applicable solar panels.		of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities
7	The activity shall ensure that the replaced baseline lamps are those that directly consume fossil fuel	The common practice of fuel usage for lighting in the project region according to representative sample surveys, official data or peer reviewed literature as shown in section A.5 of the specific CPA	Section A.5 of the specific CPA will include this information. Therefore, this criterion is clearly stated in accordance with paragraph 18 (e) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities
8	The proposed or implemented distribution method of the project lamps is described	Method is included in CPA-DD in section A.3	Section A.3 of the specific CPA will include this information. Therefore, this criterion is clearly stated in accordance with paragraph 18 (e) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities
9	The method to encourage the end-users to use the project lamps and discourage hoarding is described	Method is included in CPA-DD in section A.5	Section A.5 of the specific CPA will include this information. Therefore, this criterion is clearly stated in accordance with paragraph 18 (e) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities
10	The method to comply with regulations pertaining to the use and disposal of batteries is described	Method is included in CPA-DD in section A.5	Section A.5 of the specific CPA will include this information. Therefore, this criterion is clearly stated in accordance with paragraph 18 (e) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities
11	Measures are in place to ensure that lamp owners have access to replacement batteries of comparable quality	Measures are described in CPA-DD in section A.5	Section A.5 of the specific CPA will include this information. Therefore, this criterion is clearly stated in accordance with paragraph 18 (e) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities
12	Project lamps are certified by their manufacturer to have a rated average life of at least 10,000 hours (Option 2), defined as the time at which the lamp's initial light output will decline by no more than 30%. Under Option 2, paragraph 18, as an alternative to long-term measurement of light output over the full lifetime of the lamp, a shortened	Confirmation by a third-party testing organization using an applicable standard and testing protocol of the rated average life of the project lamps is shown for each technology in section A.5	Section A.5 of the specific CPA will include this information. Therefore, this criterion is clearly set out and it is verifiable.

	measurement period of 2,000 hours may be chosen. If a 2,000 hour test period is used, the relative luminous flux shall not decrease by more than 15 per cent during the 2,000 hours of continuous operation. If the average life value is not available ex ante, it shall be made available for verification.		
13	Project lamps shall meet or exceed the following minimum performance characteristics, which should be proven by third-party test results: luminous flux of 25 lumens or illuminance of 50 lux over an area equal to or greater than 0.1 m ² when suspended at a distance of 0.75 meters or self supported. The light output over a 2,000 hour lumen maintenance test should not decline by more than 15%.	Test results, reports or equivalent for solar lamps implemented under the CPA in shown for each technology in section A.5	Section A.5 of the specific CPA will include this information. Therefore, this criterion is clearly set out and it is verifiable.
14	Project lamps shall be charged by a renewable energy system included as part of the lamp and meet or exceed the following minimum performance characteristics, which should be proven by third-party test results: Daily Burn Time (DBT) shall be greater than or equal to 4.0 hours.	Test results, reports or equivalent for solar lamps implemented under the CPA is shown for each technology in section A.5	Section A.5 of the specific CPA will include this information. Therefore, this criterion is clearly set out and it is verifiable.
15	The minimum design specifications for project lamps are described in line with AMS-III.AR requirements	Specifications are included in CPA-DD in section A.5	Section A.5 of the specific CPA will include this information. Therefore, this criterion is clearly set out and it is verifiable.
16	In line with AMS-III.AR requirements, the project lamps shall achieve a minimum level of protection with regard to physical ingress and water protection in accordance with IEC 60529, or an equivalent national standard, or the approved norms indicated in paragraph 14 including <i>Lighting Africa Quality Test Method</i> . If test results are not available <i>ex-ante</i> , they shall be made available at project verification.	Confirmation by a third-party testing organization using an applicable standard and testing protocol of the Ingress Protection class of the lamp is in section A.5	Section A.5 of the specific CPA will include this information. Therefore, this criterion is clearly set out and it is verifiable.
17	Debundling check Each CPA will demonstrate it is exempt from a debundling check by showing that each	Section A.12 and an Excel Calculation will show the expected emission reduction per solar lamp and	Section A.12 and the Excel calculation will support this part. Therefore, this criterion is clearly set out in accordance with paragraph 18 (l) of

	solar lamp shall result in an expected annual emission reduction less than 1% of the small-scale threshold (i.e. 600 tCO ₂ e).	demonstrate that the emissions per sub-system result in less than 1% of the small-scale threshold.	the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities
18	<u>Threshold check / Additionality demonstration</u> The total annual emission reductions of the solar lamps is less than or equal to 60 ktCO ₂	Evidence of the number of implemented project lamps and the calculation of the expected reductions per lamp is shown in an Excel Calculation	Excel calculation will be provided. Therefore, this criterion is clearly set out and it is verifiable.
19	<u>Additionality demonstration</u> The technology(ies) installed under the CPA pertain to Solar technologies (photovoltaic and solar thermal electricity generation)	Solar lamp technical information showing that the charging relies on a photovoltaic system is shown in section A.5	Section A.5 of the specific CPA will include this information. Therefore, this criterion is clearly set out and it is verifiable.
20	<u>Crediting Period</u> The CPA will have a fixed crediting period.	The type of crediting period is fixed as stated in section A.9.2 of the CPA	Section A.9.2 will include this information. Therefore, this criterion is clearly set out and it is verifiable.
21	<u>Public Funding</u> The CPA will confirm that it is not receiving funding dedicated as Official Development Assistance (ODA) through a two-stage process. The first stage is a statement by the CPA Implementer if it is receiving public funding. If the CPA is receiving public funding second statement is required from the funder affirming that the public funding is not ODA	A statement that the activity is not receiving public funding or the public funding is not ODA is shown in Appendix 2	A statement has been provided. Therefore, this criterion is clearly set out and it is verifiable.
22	<u>CME Approval</u> The CPA will prove it has received the approval of the CME of the PoA or state the CPA Implementer and the CME are the same	A letter showing the CME has approved the CPA or a statement in section E that the CME and CPA Implementer are the same	A letter will be provided. Therefore, this criterion is clearly set out and it is verifiable.
23	<u>Target Group</u> The CPA targets households and/or institutions/SMEs	Target groups are households and/or institutions/SMEs as shown in section A. 3 and B.2	Section B.2 will show this information. Therefore, this criterion is clearly set out and it is verifiable.
24	<u>Sampling</u> The CPA will adhere to the sampling requirements stipulated by the CME in section C of the PoA-DD	Adherence to the sampling requirements of the PoA is shown in section D.7.2	For the proposed POA, the submission of the monitoring plan is delayed and submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. There is no additional background information available at this time, and this is in accordance with paragraph 62 of the CDM project Standard (version 09).
25	<u>Stakeholder Consultation</u>	Consideration of the	Section B.1 and C.1 of the CPA will

	and Environmental Analysis The Local Stakeholder Consultation and Environmental Impact Analysis have been conducted at the PoA level. Each CPA will take into consideration the comments from the Stakeholder Consultation and abide by the environmental regulations of the host country	comments from Local Stakeholder Consultation, and a statement that the CPA will adhere to the environmental regulations of the host country as shown in section B.1 and C.1 of the CPA	show this information. Therefore, this criterion is clearly set out and it is verifiable.
26	Distribution The CPA will use one or multiple of the following methods for distribution of appliances implemented under the CPA: 1. Direct sale/service to end-users 2. Bulk sales to distributors who sell on to the end user 3. Distribution to the end-user by an organization receiving the products/measures from the CME	Description of the distribution method is provided in section A.3	The distribution method has been included. Therefore, this criterion is clearly stated in accordance with paragraph 18 (i) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities.
27	CER Ownership The CPA will assure ownership of the CERs is secured by the CME	A statement by the CPA Implementer that it has yielded the rights to any CERs to the CME and that the CPA Implementer will ensure any distributors, manufacturers, or service providers cede their rights to the resulting CERs as well	A statement by the CPA Implementer will be provided. Therefore, this criterion is clearly set out and it is verifiable.

B.5. Estimation of emission reductions or net GHG removals by sinks of the generic CPA

B.5.1. Explanation of methodological choices

Means of validation	<p>The validation team has reviewed the generic CPA type 1 assessing the adequate justification of options and equations taken based on the choice of the baseline scenario and context of CPA in accordance with the applied methodology.</p> <p>CPAs type 1 – AMS-III.AR version 05:</p> <p>Annual emission reductions are calculated as per para. 26, as follows. Emission reductions are considered from the date of distribution of the project lamps to end-users.</p> $ER_y = \sum_{i,j} N_{i,j} * BE_{y,i} * OF_{y,i,j}$ <p>Where</p> <p>ER_y Emission reductions in year y (tCO₂e)</p> <p>$N_{i,j}$ Number of project lamps distributed to end users of lamp type i with charging method j</p>
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	<p>= solar</p> <p>$OF_{y,ij}$ Percentage of project lamps distributed to end users that are operating and in service in year y, for each lamp type i and charging method j. Assumed to be equal to 100% for years 1, 2 and 3, and equal to the value determined in paragraph 28, for years 4, 5, 6 and 7</p> <p>According to para. 30 of AMS-III.AR, for project lamps that will claim emission reductions for up to seven years, <i>ex-post</i> monitoring surveys to determine percentage of project lamps distributed to end users that are operating and in service will be conducted during the third year of the crediting period.</p> $BE_y = DV * GF_y * DB_y$ <p>Where</p> <p>BE_y Baseline emissions per project lamp in year y (t CO₂e)</p> <p>GF Grid Factor in year y, Equal to 1.0 since charging option defined in paragraph 3(a) is used</p> <p>DB_y Dynamic Baseline Factor (change in baseline fuel, fuel use rate, and/or utilization during crediting period) in year y, Option 1: default of 1.0 in the absence of relevant information</p> <p>Baseline emissions are determined in line with para.20 and 21 of AMS-III.AR.</p> $DV = FUR * O * U * EF / 1000 * LF * n * NTG$ <p>Where</p> <p>DV Lamp Emission Factor</p> <p>FUR Fuel use rate, L/hr</p> <p>O Utilization rate, hr/day</p> <p>U Annual utilization, day/year</p> <p>EF Fuel emissions factor, kgCO₂/L</p> <p>LF Leakage factor</p> <p>n Number of fuel-based lamps replaced per project lamp</p> <p>NTG Net-to-gross adjustment factor</p>
Findings	No finding has been raised.
Conclusion	<p>The application of the baseline methodology has been transparently detailed in the generic CPA. The consideration of the leakages, the boundaries of the CPA and the calculations are in accordance with the provisions of the relevant methodology. The guidelines for the application of the methodology in the POA are correctly detailed in the generic CPA.</p> <p>The generic CPA confirms to meet the procedures provided in the methodology and PoA-DD. The formulae are correctly presented for the determination of emission reductions. The assumptions and data used to determine the emission reductions are listed in the generic CPA and all the sources have been detailed. In summary, the calculations of emission reductions are considered to be correct and according to requirements stated in the applied methodology and POA.</p> <p>Therefore, AENOR, based on the above assessment, confirms that:</p> <ul style="list-style-type: none"> • All assumptions and data used by the project participants are listed in the generic CPA, including their references and sources; • All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the generic CPA; • All values used in the generic CPA are considered reasonable in the context of the proposed CDM Programme of Activities;

	<ul style="list-style-type: none"> The baseline methodologies have been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions; and All estimates of the baseline emissions can be replicated using the data and parameter values provided in the generic CPA.
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B.5.2. Data and parameters fixed ex ante

Means of validation	<p>The list of parameters fixed ex ante has been correctly detailed in the generic CPA type 1. It has been crosschecked against the applied methodology and related POA-DD. The parameters are:</p> <p><u>CPAs type 1 – AMS-III.AR:</u></p> <ul style="list-style-type: none"> DV: Lamp Emission Factor. This is a default value obtained from the methodology as 0.092 tCO₂e per project lamp. FUR: Fuel Use Rate. This is a default value of 0.03 L/hour obtained from the methodology. O. Utilization Rate. This is a default value of 3.5 Hours/day obtained from the methodology. U: Annual Utilization. This is a default value of 365 Days/Year obtained from the methodology. EF. Fuel Emissions Factor. This is a default value of 2.4 kgCO₂/liter obtained from the methodology. N: Number of fuel-based lamps replaced per project lamp. This is a default value of 1 obtained from the methodology. GF_y: Grid Factor in year y. Applicable to lamps that are charged with renewable energy. This is a default value of 1.0 obtained from the methodology. DB_y: Dynamic Baseline Factor in Year y. This is a default value of 1.0 obtained from the methodology.
Findings	No finding has been raised.
Conclusion	<p>The list of fixed parameters above detailed is considered complete and in accordance with applied methodology and the related POA.</p> <p>All the data are derived from official data sources or replicable records and have been correctly quoted. All data sources and assumptions are appropriate and calculations are correct as applicable to the generic CPA, and will result in an accurate or otherwise conservative estimate of the emission reductions, therefore, in accordance with paragraph 142 of the CDM Validation and Verification Standard.</p>

B.5.3. Ex ante calculation of emission reductions or net GHG removals by sinks

Means of validation	AENOR has validated that data and assumptions considered and listed in the generic CPA are consistent with stated data, methodology and type of CPA.
Findings	No finding has been raised.

Conclusion	The equations and formulae used for the ex-ante calculation are consistent with the methodology applied in the CPA. Steps taken and the equations and parameters applied in the CPA to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology.
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B.6. Application of the monitoring methodology and description of the monitoring plan

Means of validation	For the proposed Programme of Activities, the submission of the monitoring plan is delayed and will be submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. This option is stated in accordance with paragraph 62 of the CDM project standard (version 09.0).
Findings	No findings have been detected
Conclusion	Not applicable since project participants have decided that the submission of monitoring plan is delayed and that the PoA-DD and CPA-DD submitted for registration do not contain information related to the monitoring plan.

B.6.1. Data and parameters to be monitored by the generic CPA

Means of validation	For the proposed Programme of Activities, the submission of the monitoring plan is delayed and will be submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. This option is stated in accordance with paragraph 62 of the CDM project standard (version 09.0).
Findings	No findings have been detected
Conclusion	Not applicable since project participants have decided that the submission of monitoring plan is delayed and that the PoA-DD and CPA-DD submitted for registration do not contain information related to the monitoring plan.

B.6.2. Description of the monitoring plan for the generic CPA

Means of validation	For the proposed Programme of Activities, the submission of the monitoring plan is delayed and will be submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. This option is stated in accordance with paragraph 62 of the CDM project standard (version 09.0).
Findings	No findings have been detected
Conclusion	Not applicable since project participants have decided that the submission of monitoring plan is delayed and that the PoA-DD and CPA-DD submitted for registration do not contain information related to the monitoring plan.

PART III. Generic component project activity(ies)

SECTION A. General description of generic CPA type 2

Means of validation	The general description of generic CPA type 2 has been included in Part II of the POA-DD. It has been crosschecked against the description of the Programme and the <i>Instructions for filling out the programme design document form for small-scale</i>
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	<p><i>CDM programme of activities.</i></p> <p>This CPA includes the implementation of mini-hydroelectric plants that provide electricity generated by hydropower, for off-grid communities or similar end-users in the in Ethiopia</p> <p>The general description of Generic CPA is transparent, consistent and appropriate.</p>
Findings	No finding has been raised.
Conclusion	AENOR confirms that the generic CPA-DD has been prepared for each technology/measure, and the methodology in accordance with the relevant requirements in the Project standard.

SECTION B. Application of a baseline and monitoring methodology and standardized baseline

B.1. Applicability of selected methodology(ies) and/or standardized baseline

Means of validation	<p>The technology will be implemented independently, without overlap among individual users. The technology will be applied as follows:</p> <p>2) Methodology: AMS-I.F. Renewable electricity generation for captive use and mini-grid, Version 3.0</p> <ul style="list-style-type: none"> ➤ Switch from fossil fuel based energy services to zero-emissions electricity <p>Main components: solar photovoltaic (PV) or hydroelectricity units providing zero-emissions electricity to institutions or groups of users</p> <p>Measure: switch of technology with change of energy source</p> <p>Type I - Renewable Energy Projects</p> <p>Sectoral Scope: 1, Energy industries (renewable - / non-renewable sources)</p> <p>Technologies: Mini-hydroelectricity plants</p> <p>The applicability conditions of the methodology is detailed in Section B of the generic description included in the POA-DD.</p>
Findings	<p>CAR 5: The version of the methodologies should be updated to the most recent ones.</p> <p>CAR 6: Provisions regarding the updating of the CPAs in case of held or withdrawal of the methodologies shall be taken into account in the PoA-DD</p>
Conclusion	The applicability criterion of the baseline methodology has been transparently detailed in section B of the CPA detailed in the final version of the POA-DD. The consideration of the leakages, the boundaries of the CPA and the calculations are in accordance with the provisions of the relevant methodology and support documentation provided. The guidelines for the application of the methodology in the PoA have been clearly detailed for the CPA.

B.1.1. Deviation from methodology

Means of validation	Not applicable since no deviation from the methodology has been detected.
Findings	Not applicable since no deviation from the methodology has been detected.
Conclusion	Not applicable since no deviation from the methodology has been detected.

B.1.2. Clarification on applicability of methodology, tool and/or standardized baseline

Means of validation	Not applicable since no clarification on applicability of methodology or tool has been
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	detected.
Findings	Not applicable since no clarification on applicability of methodology or tool has been detected.
Conclusion	Not applicable since no clarification on applicability of methodology or tool has been detected.

B.2. Sources and GHGs

Means of validation	<p>Section B.3 details the gases and sources included in the CPA boundary which have been stated in accordance with the applied methodology.</p> <p>For mini-hydroelectricity plants, the boundary includes the project power plants. If a project power plant is connected with other power plants in a mini and/or isolated grid, then the boundary also extends to all power plants connected physically to the said electricity system.</p>
Findings	No finding has been raised.
Conclusion	<p>The physical delineation of the CPA under the PoA and the description of the emission sources and GHGs that are included in the CPA boundary are appropriate for the purpose of calculating project and baseline emissions for the CPA.</p> <p>In addition, all emission sources and GHGs related included and excluded from the project boundary are clearly identified and described in a complete manner in the latest version of generic part the PoA-DD.</p> <p>The validation team states that the identified boundary and the selected sources and gases are correctly justified by the project proponent in the PoA-DD, and they are in accordance with the applied methodology. Hence, the validation team confirms the Programme of Activities is validated in accordance with paragraph 91 of CDM Validation and Verification Standard.</p>

B.3. Description of baseline scenario

Means of validation	<p>The description of the baseline scenario has been stated in section B.4 of generic CPA type 2 detailed in the POA-DD and it has been crosschecked against the applied methodology.</p> <p>In accordance with AMS-I.F, if the baseline scenario is a mini-grid system where all generators use exclusively fuel oil and/or diesel fuel, the baseline emissions are the annual net electricity generated by the renewable energy unit times an emission factor for a modern diesel generating unit of the relevant capacity operating at optimal load as given in Table 2 of AMS-I.F Version 3.</p> <p>Baseline emissions for other systems are the product of amount electricity displaced with the electricity produced by the renewable generating unit and an emission factor. The emission factor for a grid is calculated as per the procedures provided in AMS-I.D. The emission factor for a mini-grid, other than generators exclusively using fuel oil and/or diesel fuel, is determined as per the weighted average emissions for the current mix following the procedure provided in AMS-I.D. The emission factor for a captive electricity generation is calculated as per the procedures in the "Methodological tool: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation Version 2".</p>
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Findings	No finding has been raised.
Conclusion	The method used to calculate the baseline the CPA is established according to the small scale methodology AMS-I.F and the referred POA. The baseline identified for the CPA type 2 is the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the CPA.

B.4. Demonstration of eligibility for a generic CPA

No	Means of validation/Findings/Conclusion	Eligibility criteria as set out in the PoA-DD	Means of validation/Findings/Conclusion
1	<u>Geographical boundary</u> The Mini-hydroelectricity plants installed under the CPA will be uniquely identifiable, to avoid double counting through GPS coordinates of each plant installed	Location information of Mini-hydroelectricity plants in the program database, or planned locations for systems still to be implemented as in section A.3 and A.7 of the specific CPA	This information will be included in section A.3 and A.7 of the specific CPA. Therefore, this criterion is clearly set out in accordance with paragraph 18 (a) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities
2	<u>Start Date</u> The start date of the CPA is on or after the start date of the PoA. The start date of the CPA is the date on which real action concerning the CPA, as shown through a contract for equipment or construction	Contract showing procurement of equipment or construction services concerning the CPA	Contract showing procurement of equipment or construction services concerning the CPA will be provided. Furthermore, this criterion is clearly set out in accordance with paragraph 18 (d) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities
3	<u>Double-counting</u> The Mini-hydroelectricity plants installed under the CPA will be uniquely identifiable, to avoid double counting through GPS coordinates of each plant installed	Ownership and contact information for implementers of Mini-hydroelectricity plants along with identification information and the GPS coordinates of the facility (e.g. serial number) in the program database; or evidence of procedures to record this information for systems still to be implemented. CPAs will provide a sample form showing the information to be collected for each system under the CPA containing the	A program database and an image of the unique serial number(s) for each technology type will be provided. Therefore, this criterion is clearly set out and it is verifiable.

		information required such as contact information and GPS coordinates.	
4	Methodology applicability The users of the mini-hydroelectricity plant previously used electricity from a fossil fuel fired captive power plant or a carbon intensive mini-grid, where a mini-grid is a small-scale power system with a total installed capacity of its generators not exceeding 15 MW that is not connected to a national or a regional grid	Diagnostic analysis or feasibility assessment for the mini-hydroelectricity plant showing the existing electricity source of its users	Diagnostic analysis or feasibility assessment for the mini-hydroelectricity plant showing the existing electricity source of its users will be provided. Therefore, this criterion is clearly stated in accordance with paragraph 18 (e) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities
5	Any mini-hydroelectricity plant that has a reservoir must satisfy one of the following criteria: if it is an existing reservoir, there is no change in its volume; if it is an existing reservoir and its volume is increased, then the power density of the power plant is greater than 4 W/m ² ; if it is a new reservoir, then the power density of the power plant is greater than 4 W/m ² .	Technical information of the mini-hydroelectricity plants installed under the CPA demonstrate the status of the reservoir and permit calculation of the power density greater than 4 W/m ² .	Technical information of the mini-hydroelectricity plants installed under the CPA demonstrate the status of the reservoir and permit calculation of the power density greater than 4 W/m ² will be provided. Therefore, this criterion is clearly set out and it is verifiable.
6	Each mini-hydroelectricity plant is either a new power plant at a site where there was no renewable energy power plant operating previously, or is a capacity addition	Technical specifications of the installations under the CPA to determine whether the plant is new or adds capacity to existing renewable power generation	Technical specifications of the installations under the CPA to determine whether the plant is new or adds capacity to existing renewable power generation will be provided. Therefore, this criterion is clearly set out and it is verifiable.
7	In any case where the mini-hydroelectricity plant is an addition of capacity to existing renewable power generation, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units	Technical specifications of the installations under the CPA where the CPA adds capacity to existing renewable power generation	Technical specifications of the installations under the CPA will be provided. Therefore, this criterion is clearly set out and it is verifiable.
8	If electricity produced by a mini-hydroelectricity plant is delivered to a third party, a contract between the supplier and consumer(s) of the energy ensures that there is no double counting of emission reductions	Contracts with consumer(s) for any relevant cases, or model contracts in the case of plants not yet installed	Technical specifications of the installations under the CPA will be provided. Therefore, this criterion is clearly set out and it is verifiable.
9	Technology Type & level of service check for the mini-hydroelectricity plant	Technical specifications showing the capacity, estimated capacity factor, and type of service to be delivered by the plant	Technical specifications of the installations under the CPA will be provided. Therefore, this criterion is clearly set out and it is verifiable.
10	The included mini-hydroelectricity plant have successfully completed the quality control check	Completed quality control form with positive result for the installed systems; or evidence of procedures to record this information for plants still to be	Technical specifications of the installations under the CPA will be provided. Therefore, this criterion is clearly set out and it is verifiable.

		installed	
11	<p><u>Debundling check</u></p> <p>Evidence of exemption from a debundling check will be shown through each facility having a capacity less than 150 kW, or satisfy the following two conditions: not have the same activity implementer as another small scale CPA or the same CME as also manages a large scale PoA, of the same technology/measure, and if yes to the previous, the boundary of that small scale CPA or large scale PoA is not within 1 km of the boundary of the proposed small-scale CPA</p>	<p>An Excel calculation will be provided showing evidence of the rated capacity of the installed mini-hydroelectricity plant and demonstrating that the installed capacity of each sub-system is less than 150 kW, or for systems larger than 150 kW, evidence to fulfil the conditions described</p>	<p>Section A.12 and the Excel calculation will support this part. Therefore, this criterion is clearly set out in accordance with paragraph 18 (l) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities</p>
12	<p><u>Threshold check / Additionality demonstration</u></p> <p>The total installed capacity of the mini-hydroelectricity plants included in the CPA is less than or equal to 15 MWe</p>	<p>Evidence of the number of implemented mini-hydroelectricity plants and their installed capacities from the program database is shown through an Excel Calculation</p>	<p>Excel calculation will be provided. Therefore, this criterion is clearly set out and it is verifiable.</p>
13	<p><u>Additionality demonstration</u></p> <p>For mini-hydroelectricity plants, the plant provides zero-emissions electricity for rural users who did not have access to electricity prior to the project activity</p>	<p>Location information of the Mini-hydroelectricity plants in the program database, demonstrating that the recipients of electricity did not previously have access to the national grid or any regional grid as well as written confirmation from the mini-grid operator that end-users did not have access to electricity prior to the project activity</p>	<p>Section A.5 of the specific CPA will include this information and the written confirmation from the mini-grid operator will be provided. Therefore, this criterion is clearly set out and it is verifiable.</p>
14	<p>For mini-hydroelectricity plants, the rural electrification rate in Ethiopia is less than 20% at the time of submission for inclusion of the CPA and end-users connected under the project did not have access to electricity prior to the project activity</p>	<p>The most recent available data on the electrification rates (no older than three years from the time of submission for inclusion of the CPA) shall be used to demonstrate compliance with the 20 per cent threshold and written confirmation will be provided that the end-users connected under the project did not have access to</p>	<p>Section A.5 of the specific CPA will include this information and the written confirmation from the mini-grid operator will be provided. Therefore, this criterion is clearly set out and it is verifiable.</p>

		electricity prior to the project activity	
15	<u>Crediting Period</u> The CPA will have a renewable crediting period.	The type of crediting period is renewable as stated in section A.9.2	Section A.9.2 will include this information. Therefore, this criterion is clearly set out and it is verifiable.
16	<u>Public Funding</u> The CPA will confirm that it is not receiving funding dedicated as Official Development Assistance (ODA) through a two-stage process. The first stage is a statement by the CPA Implementer if it is receiving public funding. If the CPA is receiving public funding second statement is required from the funder affirming that the public funding is not ODA	A statement that the activity is not receiving public funding or the public funding is not ODA is shown in Appendix 2	A statement has been provided. Therefore, this criterion is clearly set out and it is verifiable.
17	<u>CME Approval</u> The CPA will prove it has received the approval of the CME of the PoA or state the CPA Implementer and the CME are the same	A letter showing the CME has approved the CPA as shown or a statement given that the CPA Implementer are CME are the same	A letter will be provided. Therefore, this criterion is clearly set out and it is verifiable.
18	<u>Target Group</u> The CPA targets households and/or institutions/SMEs	Target groups are households and/or institutions as shown in section B.2	Section B.2 will show this information. Therefore, this criterion is clearly set out and it is verifiable.
19	<u>Sampling</u> The CPA will adhere to the sampling requirements stipulated by the CME in section C of the PoA-DD	Adherence to the sampling requirements of the PoA is shown in section D.7.2	For the proposed POA, the submission of the monitoring plan is delayed and submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. There is no additional background information available at this time, and this is in accordance with paragraph 62 of the CDM project Standard (version 09).
20	<u>Stakeholder Consultation and Environmental Analysis</u> The Local Stakeholder Consultation and Environmental Impact Analysis have been conducted at the PoA level. However, in addition to each CPA considering the comments from the Stakeholder Consultation and abide by the environmental regulations of the host country, a Local Stakeholder consultation will be conducted at the CPA level as well, along with any local environmental studies required by the laws of the host country for hydropower facilities.	Local Stakeholder Consultation report and consideration of the comments from both the Local Stakeholder Consultation at the PoA level and the CPA level, and any local environmental studies required by the laws of the host country for hydropower facilities as shown in section B.1 and C.1 of the CPA	Section B.1 and C.1 of the CPA will show this information. Therefore, this criterion is clearly set out and it is verifiable.
21	<u>Distribution</u>	Description of the	Description of the method has

	<p>The CPA will use one or multiple of the following methods for distribution of appliances implemented under the CPA:</p> <ol style="list-style-type: none"> 1. Direct sale/service to end-users 2. Bulk sales to distributors who sell on to the end user <p>Distribution to the end-user by an organization receiving the products/measures from the CME</p>	<p>distribution method is provided in section A.3</p>	<p>been provided. Therefore, this criterion is clearly stated in accordance with paragraph 18 (i) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities.</p>
22	<p>CER Ownership The CPA will assure ownership of the CERs is secured by the CME</p>	<p>A statement by the CPA Implementer that it has yielded the rights to any CERs to the CME and that the CPA Implementer will ensure any distributors, manufacturers, or service providers cede their rights to the resulting CERs as well</p>	<p>A statement by the CPA Implementer will be provided. Therefore, this criterion is clearly set out and it is verifiable.</p>

B.5. Estimation of emission reductions or net GHG removals by sinks of the generic CPA

B.5.1. Explanation of methodological choices

Means of validation

The validation team has reviewed the generic CPA assessing the adequate justification of options and equations taken based on the choice of the baseline scenario and context of each type of CPA in accordance with the applied methodology:

CPAs type 2 - AMS-I.F

Baseline Emissions:

Following paragraph 18 of the methodology, for a mini-grid system where all generators use exclusively fuel oil and/or diesel fuel, the baseline emissions is the annual electricity generated by the renewable energy unit times an emission factor for a modern diesel generating unit of the relevant capacity operating at optimal load as given in the table below.

Cases	Mini-grid with 24 hour service	(a) Mini-grid with temporary service (4-6 hr/day); (b) Productive applications; (c) Water pumps	Mini-grid with storage
Load factors [%]	25%	50%	100%
<15 kW	2.4	1.4	1.2
>=15 <35 kW	1.9	1.3	1.1
>=35 <135 kW	1.3	1.0	1.0
>=135<200 kW	0.9	0.8	0.8
> 200 kW ^(c)	0.8	0.8	0.8

In line with AMS-I.F para. 19, baseline emissions for other systems are the product of amount electricity displaced with the electricity produced by the renewable generating unit and an emission factor.

The equation is applied as follows for the CPA:

$$BE_y = E_{GBL,y} * E_{FCO2,y}$$

Where

BE_y Baseline emissions in year y; tCO₂

EGBL_y Quantity of net electricity displaced as a result of the implementation of the CDM project activity in year y for unit i installed; MWh

EFCO_{2,y} Emission factor; tCO₂/MWh

The emission factor for a grid is calculated as per the procedures provided in AMS-I.D. The emission factor for a mini-grid, other than generators exclusively using fuel oil and/or diesel fuel, is determined as per the weighted average emissions for the current mix following the procedure provided in AMS-I.D. The emission factor for a captive electricity generation is calculated as per the procedures in the “Methodological tool: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation Version 2”.

For captive electricity generation, the baseline emission factor is calculated as per the “Methodological tool: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation Version 2”. When the “Methodological tool: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation Version 2” is applied to calculate the baseline emission factor, the CPA will utilize Option B2 of the “Methodological tool: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation Version 2” and use a default value of 1.3 or 0.4 tCO₂/MWh.

A value of 1.3 tCO₂/MWh is used if the electricity consumption source is a project or leakage consumption source, or the electricity consumption source is a baseline electricity consumption source and the electricity consumption of all baseline electricity consumption sources at the site of the captive power plants is less than the electricity of all project electricity consumption sources at the site of the captive power plant(s).

A value of 0.4 tCO₂/MWh is used if the electricity consumption source is a baseline electricity consumption source, or the electricity consumption source is a project electricity consumption source and the electricity consumption of all baseline electricity consumption sources at the site of the captive power plant(s) is greater than the electricity consumption of all project electricity consumption sources at the site of the captive power plant(s). Project Emissions:

In line with para. 24 of AMS-I.F, it must be considered if there are emissions from water reservoirs of hydro power plants.

If the hydro power plant has a reservoir, then the power density of the power plant must be calculated, as follows, in line with para. 37 of ACM0002. This must also have been calculated to satisfy Criterion 5 in Section B.5.

$$PD = (CAP_{PJ} - CAP_{BL}) / (A_{PJ} - A_{BL})$$

Where

PD Power density of the project activity (W/m²)

CAP_{PJ} Installed capacity of the hydro power plant after the implementation of the project activity (W)

CAP_{BL} Installed capacity of the hydro power plant before the implementation of the project activity (W). For new hydro power plants, this value is zero

A_{PJ} Area of the single or multiple reservoirs measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m²)

A_{BL} Area of the single or multiple reservoirs measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m²). For new reservoirs, this value is zero

In line with para. 36 of ACM0002, if the power density of the single or multiple reservoirs (PD) is greater than 4 W/m² and less than or equal to 10 W/m²,

$$PE_y = PE_{HP,y} = EF_{Res} * TEG_y / 1000$$

Where

PE_{HP,y} Project emissions from water reservoirs (t CO₂e/yr)

EF_{Res} Default emission factor for emissions from reservoirs of hydro power plants in year y (kg CO₂e/MWh)

TEG_y Total electricity produced by the project activity, including the electricity supplied to the

	<p>grid and the electricity supplied to internal loads, in year y (MWh)</p> <p>Where (PD) is greater than 10 W/m^2, project emissions are considered to be zero, $PE_y = 0$.</p> <p>3. Leakage Emissions:</p> <p>In line with para. 27, since the mini-hydroelectricity plants are new (not transferred from another activity), leakage is considered zero.</p> <p>4. Emission Reductions:</p> <p>Emission reductions are calculated as follows:</p> $ER_y = BE_y - PE_y$ <p>Where</p> <p>ER_y Emission reductions in year y, tCO₂</p> <p>PE_y Project emissions in year y, tCO₂</p>
Findings	No finding has been raised.
Conclusion	<p>The application of the baseline methodology has been transparently detailed in the generic CPA. The consideration of the leakages, the boundaries of the CPA and the calculations are in accordance with the provisions of the relevant methodology. The guidelines for the application of the methodology in the POA are correctly detailed in each generic CPA.</p> <p>The generic CPA confirms to meet the procedures provided in the methodology and PoA-DD. The formulae are correctly presented for the determination of emission reductions. The assumptions and data used to determine the emission reductions are listed in the generic CPA and all the sources have been detailed. In summary, the calculations of emission reductions are considered to be correct and according to requirements stated in the applied methodology and POA.</p> <p>Therefore, AENOR, based on the above assessment, confirms that:</p> <ul style="list-style-type: none"> • All assumptions and data used by the project participants are listed in the generic CPA, including their references and sources; • All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the CPA; • All values used in the generic CPA are considered reasonable in the context of the proposed CDM Programme of Activities; • The baseline methodology have been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions; and • All estimates of the baseline emissions can be replicated using the data and parameter values provided in the generic CPA.

B.5.2. Data and parameters fixed ex ante

Means of validation	The list of parameters fixed ex ante has been correctly detailed in the CPA. It has been crosschecked against the applied methodology and related POA-DD. The parameters are:
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	<p>CPAs type 2 - AMS-I.F:</p> <ul style="list-style-type: none"> • $EFCO2,y$: CO2 emission factor for captive electricity in year y. A value of 1.3 tCO2/MWh is used if the electricity consumption source is a project or leakage consumption source, or the electricity consumption source is a baseline electricity consumption source and the electricity consumption of all baseline electricity consumptions sources at the site of the captive power plants is less than the electricity of all project electricity consumption sources at the site of the captive power plant(s). A value of 0.4 tCO2/MWh is used if the electricity consumption source is a baseline electricity consumption source, or the electricity consumption source is a project electricity consumption source and the electricity consumption of all baseline electricity consumption sources at the site of the captive power plant(s) is greater than the electricity consumption of all project electricity consumption sources at the site of the captive power plant(s). CAPBL: Installed capacity of the hydro power plant before the implementation of the project activity. For new hydro power plants, this value is zero. Determine the installed capacity based on recognized standards • ABL: Area of the single or multiple reservoirs measured in the surface of the water, before the implementation of the project activity, when the reservoir is full. For new reservoirs, this value is zero. Measured from topographical surveys, maps, satellite pictures, etc. • EF_{Res}: Default emission factor for emissions from reservoirs of hydro power plants in year y. This is a default value of 90 kgCO2e/MWh obtained from the methodology.
Findings	No finding has been raised.
Conclusion	<p>The list of fixed parameters above detailed is considered complete and in accordance with applied methodology and the related POA.</p> <p>All the data are derived from official data sources or replicable records and have been correctly quoted. All data sources and assumptions are appropriate and calculations are correct as applicable to the generic CPA, and will result in an accurate or otherwise conservative estimate of the emission reductions, therefore, in accordance with paragraph 142 of the CDM Validation and Verification Standard.</p>

B.5.3. Ex ante calculation of emission reductions or net GHG removals by sinks

Means of validation	AENOR has validated that data and assumptions considered and listed the generic CPA are consistent with stated data, methodology and type of CPA.
Findings	No finding has been raised.
Conclusion	The equations and formulae used for the ex-ante calculation are consistent with the methodology applied in the CPA. Steps taken and the equations and parameters applied in the CPA to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology.

B.6. Application of the monitoring methodology and description of the monitoring plan

Means of validation	For the proposed Programme of Activities, the submission of the monitoring plan is delayed and will be submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. This option is stated in accordance with paragraph 62 of the CDM project standard (version 09.0).
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Findings	No findings have been detected
Conclusion	Not applicable since project participants have decided that the submission of monitoring plan is delayed and that the PoA-DD and CPA-DD submitted for registration do not contain information related to the monitoring plan.

B.6.1. Data and parameters to be monitored by the generic CPA

Means of validation	For the proposed Programme of Activities, the submission of the monitoring plan is delayed and will be submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. This option is stated in accordance with paragraph 62 of the CDM project standard (version 09.0).
Findings	No findings have been detected
Conclusion	Not applicable since project participants have decided that the submission of monitoring plan is delayed and that the PoA-DD and CPA-DD submitted for registration do not contain information related to the monitoring plan.

B.6.2. Description of the monitoring plan for the generic CPA

Means of validation	For the proposed Programme of Activities, the submission of the monitoring plan is delayed and will be submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. This option is stated in accordance with paragraph 62 of the CDM project standard (version 09.0).
Findings	No findings have been detected
Conclusion	Not applicable since project participants have decided that the submission of monitoring plan is delayed and that the PoA-DD and CPA-DD submitted for registration do not contain information related to the monitoring plan.

PART IV. Generic component project activity(ies)**SECTION A. General description of generic CPA type 3**

Means of validation	<p>The general description of generic CPA type 3 has been included in Part II of the POA-DD. It has been crosschecked against the description of the Programme and the <i>Instructions for filling out the programme design document form for small-scale CDM programme of activities</i>.</p> <p>This CPA includes the distribution of solar home systems (SHS) that provide electricity powered by solar energy, for households or other end-users in Ethiopia.</p> <p>The general description of Generic CPA is transparent, consistent and appropriate.</p>
Findings	No finding has been raised.
Conclusion	AENOR confirms that a generic CPA-DD has been prepared for each technology/measure, each methodology in accordance with the relevant

	requirements in the Project standard.
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SECTION B. Application of a baseline and monitoring methodology and standardized baseline

B.1. Applicability of selected methodology(ies) and/or standardized baseline

Means of validation	<p>The technologies will be implemented independently, without overlap among individual users. The technology will be applied as follows:</p> <p>3) Methodology: AMS-I.L. Electrification of rural communities using renewable energy, Version 3.0</p> <ul style="list-style-type: none"> ➤ Switch from fossil fuel based energy services to zero-emissions electricity <p>Main components: solar photovoltaic (PV) or hydroelectricity units providing zero-emissions electricity to households, institutions or groups of users</p> <p>Measure: switch of technology with change of energy source</p> <p>Type I - Renewable Energy Projects</p> <p>Sectoral Scope: 1, Energy industries (renewable - / non-renewable sources)</p> <p>Technologies: Solar PV systems, Mini-hydroelectricity plants</p> <p>The applicability conditions of the methodology is detailed in Section B of the description included in the POA-DD.</p>
Findings	<p>CAR 5: The version of the methodologies should be updated to the most recent ones.</p> <p>CAR 6: Provisions regarding the updating of the CPAs in case of held or withdrawal of the methodologies shall be taken into account in the PoA-DD</p>
Conclusion	<p>The applicability criteria of the baseline methodology have been transparently detailed in section B of the generic CPA detailed in the final version of the POA-DD. The consideration of the leakages, the boundaries of each CPA and the calculations are in accordance with the provisions of the relevant methodology and support documentation provided. The guidelines for the application of the methodology in the PoA have been clearly detailed for the CPA.</p>

B.1.1. Deviation from methodology

Means of validation	By means of desk review no deviation from the methodology has been detected.
Findings	No finding has been raised
Conclusion	No deviation from the methodology has been detected.

B.1.2. Clarification on applicability of methodology, tool and/or standardized baseline

Means of validation	By means of desk review no clarification on applicability of methodology or tool has been detected.
Findings	No finding has been raised
Conclusion	No clarification on applicability of methodology or tool has been detected.

B.2. Sources and GHGs

Means of validation	Section B.3 of the generic part prepared for the CPA details the gases and sources included in the CPA boundary which have been stated in accordance with the
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	<p>applied methodology:</p> <p>For CPA, type 3: For SHS, the project boundary includes the project renewable electricity generation systems, any project distribution (grid) systems, and the physical sites of the end-use facilities served by the project activity; however, for SHS there are not expected to be any distribution systems beyond the individual household. In other words, the project boundary encompasses the locations and connections of the SHS under the CPA.</p>
Findings	No finding has been raised.
Conclusion	<p>The physical delineation of the CPA under the PoA and the description of the emission sources and GHGs that are included in the CPA boundary are appropriate for the purpose of calculating project and baseline emissions for each CPA.</p> <p>In addition, all emission sources and GHGs related included and excluded from the project boundary are clearly identified and described in a complete manner in the latest version of generic part the PoA-DD.</p> <p>The validation team states that the identified boundary and the selected sources and gases are correctly justified by the project proponent in the PoA-DD, and they are in accordance with the applied methodology. Hence, the validation team confirms the Programme of Activities is validated in accordance with paragraph 91 of CDM Validation and Verification Standard.</p>

B.3. Description of baseline scenario

Means of validation	<p>The description of the baseline scenario has been stated in section B.4 of the generic CPA detailed in the POA-DD and it has been crosschecked against the applied methodologies and the different technologies included in the different types of CPAs:</p> <ul style="list-style-type: none"> For type 3 CPA: In accordance with AMS-I.L, the baseline scenario is the equivalent amount of energy as generated by the project renewable electricity generation systems, provided by fossil fuel sources according to different baseline emission factors for each tranche of annual amount of electricity consumed per end-use facility during the crediting period.
Findings	No finding has been raised.
Conclusion	The method used to calculate the baseline for the CPA is established according to the small scale methodology AMS-I.L and the referred POA. The baseline identified for the CPA is the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the CPA.

B.4. Demonstration of eligibility for a generic CPA

No	Means of validation/Findings/Conclusion	Eligibility criteria as set out in the PoA-DD	Means of validation/Findings/Conclusion
1	<p><u>Geographical boundary</u></p> <p>The CPA is located entirely within the national boundaries of Ethiopia</p>	Location information of SHS in the program database, or planned locations for systems	<p>This information will be included in section A.3 and A.7 of the specific CPA.</p> <p>Therefore, this criterion is clearly set</p>

		still to be implemented as in section A.3 and A.7 of the specific CPA	out in accordance with paragraph 18 (a) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities. Therefore, this criterion is clearly set out and it is verifiable.
2	<u>Double-counting</u> The SHS installed under the CPA will be uniquely identifiable, to avoid double counting through GPS coordinates of each system	Ownership and contact information for implementers of SHS along with identification information and GPS coordinates of the SHS system (e.g. serial number) in the program database. CPAs will provide a sample form showing the information to be collected for each system under the CPA containing the information required such as contact information, serial number, and GPS coordinates for each technology type will be provided	A program database and an image of the unique serial number(s) for each technology type will be provided. Therefore, this criterion is clearly set out and it is verifiable.
3	<u>Start date</u> The start date of the CPA is on or after the start date of the PoA. The start date of the CPA is the date on which construction, implementation, or real action concerning the CPA, as shown through a contract detailing real action or an invoice for equipment	Sales receipt marking the first dates of sale of a SHS under the CPA	Sales receipt will be provided. Furthermore, this criterion is clearly set out in accordance with paragraph 18 (d) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities. Therefore, this criterion is clearly set out and it is verifiable.
4	<u>Methodology applicability</u> The SHS installed under the CPA are new, renewable electricity generation systems	Evidence of purchase of the SHS, to demonstrate that they are new	Evidence of purchase of the SHS will be provided. Therefore, this criterion is clearly set out and it is verifiable.
5	The SHS installed under the CPA replace fossil fuel use, such as kerosene for lighting and/or fossil-fuel fired, stand-alone generators	For SHS, evidence that end-users in the region of installation relied primarily on fossil fuel for lighting	evidence that end-users in the region of installation relied primarily on fossil fuel for lighting will be provided. Therefore, this criterion is clearly set out and it is verifiable.
6	The end-users of the electricity generated by the CPA did not have access to a national or regional grid before implementation of the SHS	Written agreement with the POs specifying that they pursue SHS sales only in 1) geographical areas outside the grid electrification plan of Ethiopia Electric Power Corporation (EEPCO); (2) remote households not qualified for grid electrification services by EEPCO; (3) isolated	Written agreement with the POs specifying will be provided. Therefore, this criterion is clearly set out and it is verifiable.

		pocket areas, etc.; and (4) institutions for whom grid connection is prohibitively expensive	
7	At least 75% of the end-users that receive electricity from systems installed under the CPA are households	Ownership and contact information for recipients of SHSs; or evidence of procedures to record this information for systems still to be implemented	Ownership and contact information for recipients of SHSs will be provided. Therefore, this criterion is clearly set out and it is verifiable.
8	End-users who utilize electricity for lighting employ only high efficient lighting equipment such as Compact Fluorescent Lamps (CFLs), Light Emitting Diode (LED) lamps, and/or fluorescent lamps	For SHSs, technical description of the systems implemented including lighting type installed	Technical description of the systems implemented including lighting type installed will be provided. Therefore, this criterion is clearly set out and it is verifiable.
9	<u>Monitoring plan applicability</u> The capacity of each project renewable electricity generation system is equal to or less than 1.0 kW (1000 W)	Evidence of the rated capacity of the installed SHS, to demonstrate that installed capacity of each is less than 1.0 kW	Evidence of the rated capacity of the installed SHS will be provided. Therefore, this criterion is clearly set out and it is verifiable.
10	<u>Technology</u> Type & level of service check for the SHS	The lighting services installed with the SHS must provide more than 12.8 lumens of light, equivalent to the average light output of simple wick kerosene lamps per household in the existing scenario	The technical part of the SHS has been provided. Therefore, this criterion is clearly set out and it is verifiable
11	The included SHSs have successfully completed the quality control check demonstrating that they comply with applicable international standards or comparable national, regional or local standards/guidelines, which are indicated in the CPA-DD	Completed quality control form with positive result for the installed systems; or evidence of procedures to record this information for plants still to be installed The applicable standard listed in the CPA-DD	The applicable standard listed in the CPA-DD. Therefore, this criterion is clearly set out and it is verifiable
12	<u>Debundling check</u> Evidence that each SHS has a rated capacity less than 150 kW will be used to show exemption from a debundling check	An Excel Calculation will be provided showing the rated capacity of the installed Institutional solar PV plant, to demonstrate that installed capacity of each is less than 150 kW, or for systems larger than 150 kW, evidence to fulfil the conditions described	Excel Calculation will be provided. Therefore, this criterion is clearly set out and it is verifiable
13	<u>Threshold check / Additionality demonstration</u> The total installed capacity of the SHSs included in the CPA is less	Evidence of the number of implemented SHSs and their installed	Excel Calculation will be provided. Therefore, this criterion is clearly set out and it is verifiable

	than or equal to 15 MWe	capacities from the program database is shown through an Excel Calculation	
14	<u>Additionality demonstration</u> For SHSs, the technology(ies) installed under the CPA pertain to Solar technologies (photovoltaic and solar thermal electricity generation)	SHS technical information showing that they encompass a solar photovoltaic system is shown	Section A.5 of the specific CPA will include this information. Therefore, this criterion is clearly set out and it is verifiable
15	<u>Crediting Period</u> The CPA will have a renewable crediting period.	The type of crediting period is renewable as shown in section A.9.2	Section A.9.2 will include this information. Therefore, this criterion is clearly set out and it is verifiable.
16	<u>Public Funding</u> The CPA will confirm that it is not receiving funding dedicated as Official Development Assistance (ODA) through a two-stage process. The first stage is a statement by the CPA Implementer if it is receiving public funding. If the CPA is receiving public funding second statement is required from the funder affirming that the public funding is not ODA	A statement that the activity is not receiving public funding or the public funding is not ODA is shown in Appendix 2	The statement has been provided. Therefore, this criterion is clearly set out and it is verifiable.
17	<u>CME Approval</u> The CPA will prove it has received the approval of the CME of the PoA or state the CPA Implementer and the CME are the same	A letter showing the CME has approved the CPA or a statement that the CME and CPA Implementer are the same	A letter will be provided. Therefore, this criterion is clearly set out and it is verifiable.
18	<u>Target Group</u> The CPA targets households	Target groups are households as shown in section B.2	Section B.2 will show this information. Therefore, this criterion is clearly set out and it is verifiable.
19	<u>Sampling</u> The CPA will adhere to the sampling requirements stipulated by the CME in section C of the PoA-DD	Adherence to the sampling requirements of the PoA is shown in section D.7.2	For the proposed POA, the submission of the monitoring plan is delayed and submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. There is no additional background information available at this time, and this is in accordance with paragraph 62 of the CDM project Standard (version 09).
20	<u>Stakeholder Consultation and Environmental Analysis</u> The Local Stakeholder Consultation and Environmental Impact Analysis have been conducted at the PoA level. Each CPA will take into consideration the comments from the Stakeholder Consultation and abide by the environmental regulations of the host country	Consideration of the comments from Local Stakeholder Consultation, and a statement that the CPA will adhere to the environmental regulations of the host country as shown in section B.1 and C.1 of the CPA	Section B.1 and C.1 of the CPA will show this information. Therefore, this criterion is clearly set out and it is verifiable.

21	<p><u>Distribution</u></p> <p>The CPA will use one or multiple of the following methods for distribution of appliances implemented under the CPA:</p> <ol style="list-style-type: none"> 1. Direct sale/service to end-users 2. Bulk sales to distributors who sell on to the end user <p>Distribution to the end-user by an organization receiving the products/measures from the CME</p>	Description of the distribution method is provided in section A.3	Distribution method has been provided. Therefore, this criterion is clearly stated in accordance with paragraph 18 (i) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities.
22	<p><u>CER Ownership</u></p> <p>The CPA will assure ownership of the CERs is secured by the CME</p>	A statement by the CPA Implementer that it has yielded the rights to any CERs to the CME and that the CPA Implementer will ensure any distributors, manufacturers, or service providers cede their rights to the resulting CERs as well	A statement by the CPA Implementer will be provided. Therefore, this criterion is clearly set out and it is verifiable.

B.5. Estimation of emission reductions or net GHG removals by sinks of the generic CPA

B.5.1. Explanation of methodological choices

Means of validation	<p>The validation team has reviewed the generic CPAs assessing the adequate justification of options and equations taken based on the choice of the baseline scenario and context of each type of CPA in accordance with the applied methodologies:</p> <p><u>CPAs type 3AMS-I.L:</u></p> <p>According to AMS-I.L para. 19, the following equation is used to calculate baseline emissions:</p> $BE_y = BE_{55,y} + BE_{250,y} + BE_{250 \text{ plus},y}$ <p>Where</p> <p>BE_y Baseline emissions in the year y; tCO₂</p> <p>$BE_{55,y}$ Aggregate baseline emissions for facilities that consumed equal to or less than 55 kWh of renewable electricity from project renewable electricity systems in year y; tCO₂</p> <p>$BE_{250,y}$ Aggregate baseline emissions for facilities that consumed more than 55 kWh but equal to or less than 250 kWh of renewable electricity from project renewable electricity systems in year y; tCO₂</p> <p>$BE_{250 \text{ plus},y}$ Aggregate baseline emissions for facilities that consumed greater than 250 kWh of renewable electricity from project renewable electricity systems in year y; tCO₂</p> <p>For facilities (end-users) that consume less than or equal to 55 kWh, baseline emissions are calculated in line with para. 20 as follows:</p> $BE_{55,y} = \sum_x EG_{x,y} * EF_{CO2,55}$ <p>Where</p> <p>$EG_{x,y}$ Electricity delivered by project renewable electricity generation system to facility x, where the electricity delivered to that facility is equal to or less than 55 kWh in year y; MWh</p> <p>$EF_{CO2,55}$ 6.8 tCO₂/MWh</p> <p>x Facility supplied with renewable electricity from operating project renewable electricity generation systems consuming equal to or less than 55 kWh in year y</p>
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	<p>Facilities that consume more than 55 kWh but less than or equal to 250 kWh calculate baseline emissions in line with para. 21 as follows:</p> $BE_{250,y} = \sum_z ((EG_{z,y} - 0.055) * EF_{CO2,250} + C)$ <p>Where</p> <p>$EG_{z,y}$ Electricity delivered by project renewable electricity generation system to facility z in year y, where the electricity delivered to the facility is more than 55 kWh but equal to or less than 250 kWh in year y; MWh</p> <p>$EF_{CO2,250}$ 1.3 tCO₂/MWh</p> <p>x Facility supplied with renewable electricity from operating project renewable electricity generation systems consuming more than 55 kWh but equal to or less than 250 kWh in year y</p> <p>C 0.374 (tCO₂), a constant calculated as (0.055 MWh x 6.8 tCO₂/MWh)</p> <p>Facilities that consume more than 250 kWh calculate baseline emissions in line with para. 22 as follows:</p> $BE_{250 plus,y} = \sum_w ((EG_{w,y} - 0.250) * EF_{CO2,250 plus} + D)$ <p>Where</p> <p>$EG_{w,y}$ Electricity delivered by project renewable electricity generation system to facility w in year y such that the electricity delivered to the facility is more than 250 kWh in year y; MWh</p> <p>$EF_{CO2,250 plus}$ 1.0 tCO₂/MWh</p> <p>w Facility supplied with renewable electricity from operating project renewable electricity generation systems consuming more than 250 kWh in year y</p> <p>D 0.6275 (tCO₂), a constant calculated as (0.055 MWh x 6.8 tCO₂/MWh + 0.195 MWh x 1.3 tCO₂/MWh)</p> <p>In line with para. 31, since the project does not entail geothermal or hydro power plants, project emissions are considered to be zero, $PE_y = 0$.</p> <p>In line with para. 32, since the SHS are new (not transferred from another activity), leakage is considered zero.</p> <p>Emission reductions are calculated as follows:</p> $ER_y = BE_y$ <p>Where</p> <p>ER_y Emission reductions in year y; tCO₂</p> <p>In accordance with para. 34, option 2 is selected for monitoring, since the capacity of each project renewable electricity generation system is equal to or less than 1.0 kW.</p>
Findings	No finding has been raised.
Conclusion	<p>The application of the baseline methodology has been transparently detailed in the generic CPA. The consideration of the leakages, the boundaries of the CPA and the calculations are in accordance with the provisions of the relevant methodology. The guidelines for the application of the methodology in the POA are correctly detailed in each generic CPA.</p> <p>The generic CPA confirm to meet the procedures provided in the methodology and PoA-DD. The formulae are correctly presented for the determination of emission reductions. The assumptions and data used to determine the emission reductions are listed in the generic CPA and all the sources have been detailed. In summary, the calculations of emission reductions are considered</p>

to be correct and according to requirements stated in the applied methodology and POA.

Therefore, AENOR, based on the above assessment, confirms that:

- All assumptions and data used by the project participants are listed in the generic CPA, including their references and sources;
- All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the CPA;
- All values used in the generic CPA are considered reasonable in the context of the proposed CDM Programme of Activities;
- The baseline methodology have been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions; and
- All estimates of the baseline emissions can be replicated using the data and parameter values provided in the generic CPA.

B.5.2. Data and parameters fixed ex ante

Means of validation	<p>The list of parameters fixed ex ante has been correctly detailed in the CPA. It has been crosschecked against the applied methodology and related POA-DD. The parameters are:</p> <p><u>CPAs type 3 AMS-I.L.:</u></p> <ul style="list-style-type: none"> • EFCO_{2,55}, Emission factor applicable to the first 55 kWh of renewable electricity consumed by each facility. This is a default value 6.8 tCO₂/MWh obtained from the methodology. • EFCO_{2,250}: Emission factor applicable to facility consumption greater than 55 kWh but equal to or less than 250 kWh. This is a default value 1.3 tCO₂/MWh obtained from the methodology. • EFCO_{2,250 plus}: Emission factor applicable to facility consumption beyond 250 kWh. This is a default value of 1.0 obtained from the methodology.
Findings	No finding has been raised.
Conclusion	<p>The list of fixed parameters above detailed is considered complete and in accordance with applied methodology and the related POA.</p> <p>All the data are derived from official data sources or replicable records and have been correctly quoted. All data sources and assumptions are appropriate and calculations are correct as applicable to the generic CPA, and will result in an accurate or otherwise conservative estimate of the emission reductions, therefore, in accordance with paragraph 142 of the CDM Validation and Verification Standard.</p>

B.5.3. Ex ante calculation of emission reductions or net GHG removals by sinks

Means of validation	AENOR has validated that data and assumptions considered and listed in each generic CPA are consistent with stated data, methodology and type of CPA.
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Findings	No finding has been raised.
Conclusion	The equations and formulae used for the ex-ante calculation are consistent with each of the methodology applied in the CPA. Steps taken and the equations and parameters applied in the CPAs to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology.

B.6. Application of the monitoring methodology and description of the monitoring plan

Means of validation	For the proposed Programme of Activities, the submission of the monitoring plan is delayed and will be submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. This option is stated in accordance with paragraph 62 of the CDM project standard (version 09.0).
Findings	No findings have been detected
Conclusion	Not applicable since project participants have decided that the submission of monitoring plan is delayed and that the PoA-DD and CPA-DD submitted for registration do not contain information related to the monitoring plan.

B.6.1. Data and parameters to be monitored by the generic CPA

Means of validation	For the proposed Programme of Activities, the submission of the monitoring plan is delayed and will be submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. This option is stated in accordance with paragraph 62 of the CDM project standard (version 09.0).
Findings	No findings have been detected
Conclusion	Not applicable since project participants have decided that the submission of monitoring plan is delayed and that the PoA-DD and CPA-DD submitted for registration do not contain information related to the monitoring plan.

B.6.2. Description of the monitoring plan for the generic CPA

Means of validation	For the proposed Programme of Activities, the submission of the monitoring plan is delayed and will be submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. This option is stated in accordance with paragraph 62 of the CDM project standard (version 09.0).
Findings	No findings have been detected
Conclusion	Not applicable since project participants have decided that the submission of monitoring plan is delayed and that the PoA-DD and CPA-DD submitted for registration do not contain information related to the monitoring plan.

PART V. Generic component project activity(ies)

SECTION A. General description of generic CPA type 4

Means of validation	<p>The general description of generic CPA type 4 has been included in Part II of the POA-DD. It has been crosschecked against the description of the Programme and the <i>Instructions for filling out the programme design document form for small-scale CDM programme of activities</i>.</p> <p>This CPA includes the implementation of mini-hydroelectricity plants that provide electricity generated by hydropower, for off-grid communities or similar end-users in Ethiopia.</p> <p>The general description of Generic CPA is transparent, consistent and appropriate.</p>
Findings	No finding has been raised.
Conclusion	AENOR confirms that a generic CPA-DD has been prepared for each technology/measure, each methodology in accordance with the relevant requirements in the Project standard.

SECTION B. Application of a baseline and monitoring methodology and standardized baseline

B.1. Applicability of selected methodology(ies) and/or standardized baseline

Means of validation	<p>The technologies will be implemented independently, without overlap among individual users. The technology will be applied as follows:</p> <p>3) Methodology: AMS-I.L. Electrification of rural communities using renewable energy, Version 3.0</p> <ul style="list-style-type: none"> ➤ Switch from fossil fuel based energy services to zero-emissions electricity <p>Main components: solar photovoltaic (PV) or hydroelectricity units providing zero-emissions electricity to households, institutions or groups of users</p> <p>Measure: switch of technology with change of energy source</p> <p>Type I - Renewable Energy Projects</p> <p>Sectoral Scope: 1, Energy industries (renewable - / non-renewable sources)</p> <p>Technology: Mini-hydroelectricity plants</p> <p>The applicability conditions of the methodologies are detailed in Section B of the generic description included in the POA-DD.</p>
Findings	<p>CAR 5: The version of the methodologies should be updated to the most recent ones.</p> <p>CAR 6: Provisions regarding the updating of the CPAs in case of held or withdrawal of the methodologies shall be taken into account in the PoA-DD</p>
Conclusion	The applicability criteria of the baseline methodologies have been transparently detailed in section B of the generic CPA detailed in the final version of the POA-DD. The consideration of the leakages, the boundaries of the CPA and the calculations are in accordance with the provisions of the methodology and support documentation provided. The guidelines for the application of the methodology in the PoA have been clearly detailed for each type of CPA.

B.1.1. Deviation from methodology

Means of validation	By means of desk review no deviation from the methodology has been detected.
Findings	No finding has been raised
Conclusion	No deviation from the methodology has been detected.

B.1.2. Clarification on applicability of methodology, tool and/or standardized baseline

Means of validation	By means of desk review no clarification on applicability of methodology or tool has been detected.
Findings	No finding has been raised
Conclusion	No clarification on applicability of methodology or tool has been detected.

B.2. Sources and GHGs

Means of validation	<p>Section B.3 of the generic part prepared for the CPA details the gases and sources included in the type of CPA boundary which have been stated in accordance with the applied methodology:</p> <p>For CPA, type 4 For mini-hydroelectricity plants, the project boundary includes the project renewable electricity generation systems, any project distribution (grid) systems, and the physical sites of the end-use facilities served by the project activity.</p>
Findings	No finding has been raised.
Conclusion	<p>The physical delineation of the CPA under the PoA and the description of the emission sources and GHGs that are included in the CPA boundary are appropriate for the purpose of calculating project and baseline emissions for the CPA.</p> <p>In addition, all emission sources and GHGs related included and excluded from the project boundary are clearly identified and described in a complete manner in the latest version of generic part the PoA-DD.</p> <p>The validation team states that the identified boundary and the selected sources and gases are correctly justified by the project proponent in the PoA-DD, and they are in accordance with the applied methodology. Hence, the validation team confirms the Programme of Activities is validated in accordance with paragraph 91 of CDM Validation and Verification Standard.</p>

B.3. Description of baseline scenario

Means of validation	The description of the baseline scenario has been stated in section B.4 of the CPA detailed in the POA-DD and it has been crosschecked against the applied methodology and the technology included in the CPA:
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	<ul style="list-style-type: none"> For type 4 CPA: In accordance with AMS-I.L, the baseline scenario is the equivalent amount of energy as generated by the project renewable electricity generation systems, provided by fossil fuel sources according to different baseline emission factors for each tranche of annual amount of electricity consumed per end-use facility during the crediting period.
Findings	No finding has been raised.
Conclusion	The method used to calculate the baseline for the CPA is established according to the small scale methodology AMS-I.L. and the referred POA. The baseline identified for the CPA is the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the CPA.

B.4. Demonstration of eligibility for a generic CPA

No	Means of validation/Findings/Conclusion	Eligibility criteria as set out in the PoA-DD	Means of validation/Findings/Conclusion
1	<u>Geographical boundary</u> The CPA is located entirely within the national boundaries of Ethiopia	Location information of Mini-hydroelectricity plants in the program database, or planned locations for systems still to be implemented as in section A.3 and A.7 of the specific CPA	This information will be included in section A.3 and A.7 of the specific CPA. Therefore, this criterion is clearly set out in accordance with paragraph 18 (a) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities
2	<u>Double-counting</u> The Mini-hydroelectricity plants installed under the CPA will be uniquely identifiable, to avoid double counting through GPS coordinates of each plant installed	Ownership and contact information for implementers of Mini-hydroelectricity plants along with identification information and GPS coordinates of the system (e.g. serial number) in the program database; or evidence of procedures to record this information for systems still to be implemented. CPAs will provide a sample form showing the	Ownership and contact information for implementers of Mini-hydroelectricity plants along with identification information and GPS coordinates of the system will be provided. Furthermore, this criterion is clearly set out in accordance with paragraph 18 (d) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities

		information to be collected for each system under the CPA containing the information required such as contact information and GPS coordinates	
3	<u>Start date</u> The start date of the CPA is on or after the start date of the PoA. The start date of the CPA is the date on which real action concerning the CPA, as shown through a contract for equipment or construction	Contract showing procurement of equipment or construction services concerning the CPA	Contract showing procurement of equipment or construction services concerning the CPA will be provided. Therefore, this criterion is clearly set out and it is verifiable.
4	<u>Methodology applicability</u> The mini-hydroelectricity plants installed under the CPA are new, renewable electricity generation systems	Evidence of purchase of the mini-hydroelectricity plants, to demonstrate that they are new	Evidence of purchase of the mini-hydroelectricity plants will be provided. Therefore, this criterion is clearly stated in accordance with paragraph 18 (e) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities
5	The mini-hydroelectricity plants installed under the CPA replace fossil fuel use, such as kerosene for lighting and/or fossil-fuel fired, stand-alone generators	For mini-hydroelectricity plant, diagnostic analysis or feasibility assessment showing the existing energy source of its users	Technical information of the mini-hydroelectricity plants installed under the CPA demonstrate will be provided. Therefore, this criterion is clearly set out and it is verifiable.
6	The end-users of the electricity generated by the CPA did not have access to a national or regional grid before implementation of the mini-hydroelectricity plants	Written agreement with the POs specifying that they pursue mini-hydroelectricity plants only in 1) geographical areas outside the grid electrification plan of Ethiopia Electric Power Corporation (EEPCO); (2) remote households not qualified for grid electrification services by EEPCO; (3) isolated pocket areas, etc.; and (4) institutions for whom grid connection is prohibitively expensive	Technical specifications of the installations under the CPA to determine whether the plant is new or adds capacity to existing renewable power generation will be provided. Therefore, this criterion is clearly set out and it is verifiable.
7	At least 75% of the end-users that	Information on	Technical specifications of the

	receive electricity from systems installed under the CPA are households	electricity end-users for Mini-hydroelectricity plants; or evidence of procedures to record this information for systems still to be implemented	installations under the CPA will be provided. Therefore, this criterion is clearly set out and it is verifiable.
8	End-users who utilize electricity for lighting employ only high efficient lighting equipment such as Compact Fluorescent Lamps (CFLs), Light Emitting Diode (LED) lamps, and/or fluorescent lamps	For Mini-hydroelectricity plants, evidence of the type of lighting employed by end-users via contractual arrangements, direct observation, or etc.	Technical specifications of the installations under the CPA will be provided. Therefore, this criterion is clearly set out and it is verifiable.
9	<u>Technology</u> Type & level of service check for the mini-hydroelectricity plant	Technical specifications showing the capacity, estimated capacity factor, and type of service to be delivered by the plant	Technical specifications of the installations under the CPA will be provided. Therefore, this criterion is clearly set out and it is verifiable.
10	The included mini-hydroelectricity plants have successfully completed the quality control check demonstrating that they comply with applicable international standards or comparable national, regional or local standards/guidelines, which are indicated in the CPA-DD	Completed quality control form with positive result for the installed systems; or evidence of procedures to record this information for plants still to be installed The applicable standard listed in the CPA-DD	Technical specifications of the installations under the CPA will be provided. Therefore, this criterion is clearly set out and it is verifiable.
11	<u>Debundling check</u> The CPA will show it is exempt from a debundling check by showing that each mini-hydroelectricity plant shall either have a rated capacity less than 150 kW, or satisfy the following two conditions: not have the same activity implementer as another small scale CPA or the same CME as also manages a large scale PoA, of the same technology/measure, and if yes to the previous, the boundary of that small scale CPA or large scale PoA is not within 1 km of the boundary of the proposed small-scale CPA	An Excel Calculation showing evidence of the rated capacity of the installed mini-hydroelectricity plant and demonstrating that the installed capacity of each sub-system is less than 150 kW, or for systems larger than 150 kW, evidence to fulfil the conditions described	Section A.12 and the Excel calculation will support this part. Therefore, this criterion is clearly set out in accordance with paragraph 18 (I) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities

12	<u>Threshold check / Additionality demonstration</u> The total installed capacity of the mini-hydroelectricity plants included in the CPA is less than or equal to 15 MWe	Evidence of the number of implemented mini-hydroelectricity plants and their installed capacities from the program database and is shown in an Excel Calculation	Excel calculation will be provided. Therefore, this criterion is clearly set out and it is verifiable.
13	<u>Additionality demonstration</u> For mini-hydroelectricity plants, the plant provides zero-emissions electricity for rural users who did not have access to electricity prior to the project activity	Location information of the Mini-hydroelectricity plants in the program database, demonstrating that the recipients of electricity did not previously have access to the national grid or any regional grid as well as written confirmation from the mini-grid operator that end-users did not have access to electricity prior to the project activity	Section A.5 of the specific CPA will include this information and the written confirmation from the mini grid operator will be provided. Therefore, this criterion is clearly set out and it is verifiable.
14	For mini-hydroelectricity plants, the rural electrification rate in Ethiopia is less than 20% at the time of submission for inclusion of the CPA and end-users connected under the project did not have access to electricity prior to the project activity	The most recent available data on the electrification rates (no older than three years from the time of submission for inclusion of the CPA) shall be used to demonstrate compliance with the 20 per cent threshold and provide written confirmation that end-users connected under the project did not have access to electricity prior to the project activity	Section A.5 of the specific CPA will include this information and the written confirmation from the mini grid operator will be provided. Therefore, this criterion is clearly set out and it is verifiable.
15	<u>Crediting Period</u> The CPA will have a renewable crediting period.	The type of crediting period is renewable as stated in section	Section A.9.2 will include this information. Therefore, this criterion is clearly set out and it is verifiable.

		A.9.2 of the CPA	
16	<u>Public Funding</u> The CPA will confirm that it is not receiving funding dedicated as Official Development Assistance (ODA) through a two-stage process. The first stage is a statement by the CPA Implementer if it is receiving public funding. If the CPA is receiving public funding second statement is required from the funder affirming that the public funding is not ODA	A statement that the activity is not receiving public funding or the public funding is not ODA is shown in Appendix 2	The statement has been included and it is considered correct. Therefore, this criterion is clearly set out and it is verifiable.
17	<u>CME Approval</u> The CPA will prove it has received the approval of the CME of the PoA or state the CPA Implementer and the CME are the same	A letter showing the CME has approved the CPA or a statement in section E that the CME and CPA Implementer are the same	A letter will be provided. Therefore, this criterion is clearly set out and it is verifiable.
18	<u>Target Group</u> The CPA targets households and/or institutions/SMEs	Target groups are households and/or institutions as shown in section B.2	Section B.2 will show this information. Therefore, this criterion is clearly set out and it is verifiable.
19	<u>Sampling</u> The CPA will adhere to the sampling requirements stipulated by the CME in section C of the PoA-DD	Adherence to the sampling requirements of the PoA is shown in section D.7.2	For the proposed POA, the submission of the monitoring plan is delayed and submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. There is no additional background information available at this time, and this is in accordance with paragraph 62 of the CDM project Standard (version 09).
20	<u>Stakeholder Consultation and Environmental Analysis</u> The Local Stakeholder Consultation and Environmental Impact Analysis have been conducted at the PoA level. However, in addition to each CPA considering the comments from the Stakeholder Consultation and abide by the environmental regulations of the host country, a Local Stakeholder consultation will be conducted at the CPA level as well, along with any local environmental studies required by the laws of the host country for hydropower facilities.	Local Stakeholder Consultation report and consideration of the comments from both the Local Stakeholder Consultation at the PoA level and the CPA level, and any local environmental studies required by the laws of the host country for hydropower facilities as shown in section B.1 and C.1 of the CPA	Section B.1 and C.1 of the CPA will show this information. Therefore, this criterion is clearly set out and it is verifiable.
21	<u>Distribution</u> The CPA will use one or multiple of the following methods for distribution of appliances implemented under the CPA:	Description of the distribution method is provided in section is	Description of the distribution method is provided in section A.3. Therefore, this criterion is clearly stated in accordance with paragraph 18 (i) of the Standard: Demonstration of

	<p>2. Direct sale/service to end-users</p> <p>2. Bulk sales to distributors who sell on to the end user</p> <p>Distribution to the end-user by an organization receiving the products/measures from the CME</p>	provided in section A.3	additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities.
22	<p><u>CER Ownership</u></p> <p>The CPA will assure ownership of the CERs is secured by the CME</p>	A statement by the CPA Implementer that it has yielded the rights to any CERs to the CME and that the CPA Implementer will ensure any distributors, manufacturers, or service providers cede their rights to the resulting CERs as well	A statement by the CPA Implementer will be provided. Therefore, this criterion is clearly set out and it is verifiable.

B.5. Estimation of emission reductions or net GHG removals by sinks of the generic CPA

B.5.1. Explanation of methodological choices

Means of validation	<p>The validation team has reviewed the generic CPA assessing the adequate justification of options and equations taken based on the choice of the baseline scenario and context of each type of CPA in accordance with the applied methodology:</p> <p><u>CPAs type 4- AMS-I.L:</u></p> <p>Baseline Emissions:</p> <p>According to AMS-I.L para. 25, the following equation is used to calculate baseline emissions:</p> $BE_y = BE_{T1,y} + BE_{T2,y} + BE_{exist,y}$ <p>Where</p> <p>BE_y Baseline emissions in the year y; tCO₂</p> <p>$BE_{T1,y}$ Baseline emissions for Type I consumers in year y; tCO₂</p> <p>$BE_{T2,y}$ Baseline emissions for Type II consumers in year y; tCO₂</p> <p>$BE_{exist,y}$ Baseline emissions of existing consumer i.e. baseline emissions from displacement of existing mini-grid in year y; tCO₂</p> <p>Following paragraph 26 of the methodology, baseline emissions of existing consumers are calculated as follows:</p> $BE_{exist,y} = ED_{exist,y} \times EF_{mgrid}$ <p>Where</p> <p>$ED_{exist,y}$ Total electricity delivered to existing consumers ($N_{exist,y}$); MWh</p>
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	<p>EF_{mgrid} Baseline emissions factor for mini-grid; tCO₂)</p> <p>Following paragraph 27 of the methodology, <i>Approach 2</i>. simplified calculation based on average electricity consumption per consumer is the approach chosen to estimate the baseline emissions associated with new Type I and Type II consumers. Under Approach 2, as per paragraph 30 of the methodology, the baseline emissions of Type I and Type II consumers are calculated as follows:</p> $BE_{T1,y} + BE_{T2,y} = (ED_{tot,y} - ED_{exist,y}) \times (1 - TL_p) \times EF_{CO2,tot}$ <p>Where $EF_{CO2,tot}$ 1.0; t/MWh</p>
Findings	No finding has been raised.
Conclusion	<p>The application of the baseline methodology has been transparently detailed in the generic CPA. The consideration of the leakages, the boundaries of the CPA and the calculations are in accordance with the provisions of the relevant methodology. The guidelines for the application of the methodology in the POA are correctly detailed in each generic CPA.</p> <p>The generic CPA confirm to meet the procedures provided in the methodology and PoA-DD. The formulae are correctly presented for the determination of emission reductions. The assumptions and data used to determine the emission reductions are listed in the generic CPA and all the sources have been detailed. In summary, the calculations of emission reductions are considered to be correct and according to requirements stated in the applied methodology and POA.</p> <p>Therefore, AENOR, based on the above assessment, confirms that:</p> <ul style="list-style-type: none"> • The assumptions and data used by the project participants are listed in the generic CPA, including their references and sources; • The documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the CPA; • The values used in the generic CPA are considered reasonable in the context of the proposed CDM Programme of Activities; • The baseline methodology have been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions; and • The estimation of the baseline emissions can be replicated using the data and parameter values provided in the generic CPA.

B.5.2. Data and parameters fixed ex ante

Means of validation	<p>The list of parameters fixed ex ante has been correctly detailed in the generic CPAs. It has been crosschecked against the applied methodology and related POA-DD. The parameters are:</p> <p><u>CPAs type 4 - AMS-I.L:</u></p> <ul style="list-style-type: none"> • EFCO2tot, Emission factor for electricity produced, 1.0, Methodology default value • CAPBL: Installed capacity of the hydro power plant before the implementation of the project activity. For new hydro power plants, this value is zero. Determine the installed capacity based on recognized
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	<p>standards</p> <ul style="list-style-type: none"> • ABL: Area of the single or multiple reservoirs measured in the surface of the water, before the implementation of the project activity, when the reservoir is full. For new reservoirs, this value is zero. Measured from topographical surveys, maps, satellite pictures, etc. • EF_{Res}: Default emission factor for emissions from reservoirs of hydro power plants in year y. This is a default value of 90 kgCO₂e/MWh obtained from the methodology.
Findings	No finding has been raised.
Conclusion	<p>The list of fixed parameters above detailed is considered complete and in accordance with applied methodology and the related POA.</p> <p>All the data are derived from official data sources or replicable records and have been correctly quoted. All data sources and assumptions are appropriate and calculations are correct as applicable to the generic CPA, and will result in an accurate or otherwise conservative estimate of the emission reductions, therefore, in accordance with paragraph 142 of the CDM Validation and Verification Standard.</p>

B.5.3. Ex ante calculation of emission reductions or net GHG removals by sinks

Means of validation	AENOR has validated that data and assumptions considered and listed in the CPA are consistent with stated data, methodology and type of CPA.
Findings	No finding has been raised.
Conclusion	The equations and formulae used for the ex-ante calculation are consistent with the methodology applied in the CPA. Steps taken and the equations and parameters applied in the generic CPA to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology.

B.6. Application of the monitoring methodology and description of the monitoring plan

Means of validation	For the proposed Programme of Activities, the submission of the monitoring plan is delayed and will be submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. This option is stated in accordance with paragraph 62 of the CDM project standard (version 09.0).
Findings	No findings have been detected
Conclusion	Not applicable since project participants have decided that the submission of monitoring plan is delayed and that the PoA-DD and CPA-DD submitted for registration do not contain information related to the monitoring plan.

B.6.1. Data and parameters to be monitored by the generic CPA

Means of validation	For the proposed Programme of Activities, the submission of the monitoring plan is delayed and will be submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. This option is stated in accordance with paragraph 62 of the CDM project standard (version 09.0).
Findings	No findings have been detected

Conclusion	Not applicable since project participants have decided that the submission of monitoring plan is delayed and that the PoA-DD and CPA-DD submitted for registration do not contain information related to the monitoring plan.
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B.6.2. Description of the monitoring plan for the generic CPA

Means of validation	For the proposed Programme of Activities, the submission of the monitoring plan is delayed and will be submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. This option is stated in accordance with paragraph 62 of the CDM project standard (version 09.0).
Findings	No findings have been detected
Conclusion	Not applicable since project participants have decided that the submission of monitoring plan is delayed and that the PoA-DD and CPA-DD submitted for registration do not contain information related to the monitoring plan.

PART VI. Generic component project activity(ies)

SECTION A. General description of generic CPA type 5

Means of validation	<p>The general description of generic CPA type 5 has been included in Part II of the POA-DD. It has been crosschecked against the description of the Programme and the <i>Instructions for filling out the programme design document form for small-scale CDM programme of activities</i>.</p> <p>This CPA includes the distribution of solar pumps for irrigation that provide access to groundwater supply powered by solar energy, for households or other end-users in Ethiopia</p> <p>The general description of Generic CPA is transparent, consistent and appropriate.</p>
Findings	No finding has been raised.
Conclusion	AENOR confirms that a generic CPA-DD has been prepared for each technology/measure, and the methodology in accordance with the relevant requirements in the Project standard.

SECTION B. Application of a baseline and monitoring methodology and standardized baseline

B.1. Applicability of selected methodology(ies) and/or standardized baseline

Means of validation	<p>The technology will be implemented independently, without overlap among individual users. The technology will be applied as follows:</p> <p>4) Methodology: AMS-I.B. Mechanical energy for the user with or without electrical energy, Version 12.0</p> <ul style="list-style-type: none"> ➤ Switch from fossil fuel based water pumping to zero-emissions water pumping <p>Main components: water pumps driven by solar photovoltaic (PV) electricity provide water services to users</p> <p>Measure: switch of technology with change of energy source</p> <p>Type I - Renewable Energy Projects</p> <p>Sectoral Scope: 1, Energy industries (renewable - / non-renewable sources)</p>
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	Technologies: Solar pumps for irrigation The applicability conditions of the methodology are detailed in Section B of the generic description included in the POA-DD.
Findings	CAR 5: The version of the methodologies should be updated to the most recent ones. CAR 6: Provisions regarding the updating of the CPAs in case of held or withdrawal of the methodologies shall be taken into account in the PoA-DD
Conclusion	The applicability criteria of the baseline methodologies have been transparently detailed in section B of the CPA detailed in the final version of the POA-DD. The consideration of the leakages, the boundaries of the CPA and the calculations are in accordance with the provisions of the relevant methodology and support documentation provided. The guidelines for the application of the methodology in the PoA have been clearly detailed for the CPA.

B.1.1. Deviation from methodology

Means of validation	By means of desk review no deviation from the methodology has been detected.
Findings	No finding has been raised
Conclusion	No deviation from the methodology has been detected.

B.1.2. Clarification on applicability of methodology, tool and/or standardized baseline

Means of validation	By means of desk review no clarification on applicability of methodology or tool has been detected.
Findings	No finding has been raised
Conclusion	No clarification on applicability of methodology or tool has been detected.

B.2. Sources and GHGs

Means of validation	Section B.3 of each generic part prepared the CPA details the gases and sources included in the CPA boundary which have been stated in accordance with the following applied methodology: For CPA, type 5: For solar pumps, the project boundary includes the physical, geographical site of the renewable energy technology and the equipment that uses the mechanical energy; in other words, the locations of the solar pump systems under the CPA.
Findings	No finding has been raised.
Conclusion	The physical delineation of the CPA under the PoA and the description of the emission sources and GHGs that are included in the CPA boundary are appropriate for the purpose of calculating project and baseline emissions for the CPA. In addition, all emission sources and GHGs related included and excluded from the project boundary are clearly identified and described in a complete manner in the latest version of generic part the PoA-DD.

	The validation team states that the identified boundary and the selected sources and gases are correctly justified by the project proponent in the PoA-DD, and they are in accordance with the applied methodology. Hence, the validation team confirms the Programme of Activities is validated in accordance with paragraph 91 of CDM Validation and Verification Standard.
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B.3. Description of baseline scenario

Means of validation	<p>The description of the baseline scenario has been stated in section B.4 of the generic CPA detailed in the POA-DD and it has been crosschecked against the applied methodologies and the different technologies included in the CPA:</p> <p>For type 5 CPAs: According to AMS-I.B, the baseline is assumed to be the generation of the mechanical energy with a fossil fuel generator or pump(s) without renewable components or co-firing of renewable biomass.</p> <p>As per paragraph 15 of the methodology, a suppressed demand scenario is deemed to exist since documented evidence exists that the project activity is located in the Least Developed Countries.⁶</p>
Findings	No finding has been raised.
Conclusion	The method used to calculate the baseline for the CPA is established according to the small scale methodology AMS-I.B and the referred POA. The description of the baseline is in accordance with methodology AMS-I.B, section 5.2.1 paragraph 12. The baseline identified for the CPA is the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the CPA.

B.4. Demonstration of eligibility for a generic CPA

Demonstration of eligibility for a generic CPA type 5:

No	Means of validation/Findings/Conclusion	Eligibility criteria as set out in the PoA-DD	Means of validation/Findings/Conclusion
1	<p><u>Geographical boundary</u></p> <p>The CPA is located entirely within the national boundaries of Ethiopia</p>	Location information of solar pump systems in the program database, or planned locations for systems still to be sold as in section A.3 and	<p>This information will be included in section A.3 and A.7 of the specific CPA.</p> <p>Therefore, this criterion is clearly set out in accordance with paragraph 18 (a) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of</p>

⁶ United Nations Committee for Development Policy. List of Least Developed Countries (as of May 2016). Accessed on June 16th 2016 at http://www.un.org/en/development/desa/policy/cdp/ldc/ldc_list.pdf.

		A.7 of the specific CPA	activities
2	<p><u>Double-counting</u></p> <p>The solar pump systems sold under the CPA will be uniquely identifiable, to avoid double counting through GPS coordinates of each system</p>	<p>Ownership and contact information for recipients of solar pump systems along with identification information and the GPS coordinates of the system (e.g. serial number) of the solar pump systems in the program database; or evidence of procedures to record this information for systems still to be implemented. CPAs will provide a sample form showing the information to be collected for each system under the CPA containing the information required such as contact information, serial number, and GPS coordinates for each technology type</p>	<p>Ownership and contact information for implementers along with identification information and GPS coordinates of the system will be provided.</p> <p>Furthermore, this criterion is clearly set out in accordance with paragraph 18 (d) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities</p>
3	<p><u>Start date</u></p> <p>The start date of the CPA is on or after the start date of the PoA. The start date of the CPA is the date on which construction, implementation, or real action concerning the CPA, as shown through a contract detailing real action or an invoice for equipment</p>	<p>Receipt of sale showing the date of sale of the first solar pump systems in the program database</p>	<p>Receipt of sale showing the date of sale of the first solar pump systems in the program database will be provided.</p> <p>Therefore, this criterion is clearly set out and it is verifiable.</p>
4	<p><u>Methodology applicability</u></p> <p>For cases where a fossil-fuel fired irrigation pump system is replaced or retrofitted, the existing system does not have a renewable component</p>	<p>For cases of replacement or retrofit, diagnostic analysis or feasibility assessment for the solar pump system showing the existing energy source displaced</p>	<p>Therefore, this criterion is clearly stated in accordance with paragraph 18 (e) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities</p>
5	<p>For cases where the solar pump system is new, the most likely baseline scenario is a fossil-fuel fired pump system</p>	<p>Demonstration that fossil-fuel fired pump systems are the most commonly installed under</p>	<p>This criterion is clearly stated in accordance with paragraph 18 (e) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of</p>

		similar circumstances and the additionality of solar pump systems	activities
6	The total installed capacity of the solar pump systems included in the CPA is less than or equal to 15 MWe	Evidence of the number of implemented solar pump systems and their installed capacities (if available) from the program database, or alternately their equivalent diesel-based electricity generating capacity required to provide the same service as the project pump	This criterion is clearly stated in accordance with paragraph 18 (e) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities
7	For cases where an existing pump is replaced, the operating characteristics (head v/s discharge and efficiency) of the new pump is similar to or better than the system being replaced	For cases of pump replacement, diagnostic analysis or feasibility assessment for the solar pump system showing the characteristics of the existing pump displaced, and those of the new pump	This criterion is clearly stated in accordance with paragraph 18 (e) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities
8	For cases where an existing water distribution system is replaced or modified, the distribution efficiency of the new distribution system is similar to or better than the system being replaced	For cases of water distribution system replacement, diagnostic analysis or feasibility assessment for the solar pump system showing the characteristics of the existing distribution system displaced, and those of the new distribution system	This criterion is clearly stated in accordance with paragraph 18 (e) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities
9	Technology Type & level of service check for the solar pump system	Technical specifications showing the capacity, estimated capacity factor, and type of service to be delivered by the pumps	Technical specifications will be provided. Therefore, this criterion is clearly set out and it is verifiable.
10	The included solar pump systems have successfully completed the quality control check	Completed quality control form with positive result for the installed	This criterion is clearly stated in accordance with paragraph 18 (e) of the Standard: Demonstration of additionality, development of eligibility

		systems; or evidence of procedures to record this information for systems still to be installed	criteria and application of multiple methodologies for programmes of activities
11	<u>Debundling check</u> The CPA will show it is exempt from a debundling check by showing that each solar pump system shall have a rated capacity less than 150 kW.	An Excel Calculation will show the rated capacity or equivalent diesel capacity of the installed solar pump systems is less than 150 kW	Excel calculation will be provided. Therefore, this criterion is clearly set out and it is verifiable.
12	<u>Additionality demonstration</u> The technology(ies) installed under the CPA pertain to Solar technologies (photovoltaic and solar thermal electricity generation)	Solar pump system technical information showing that they encompass a solar photovoltaic system is shown in an Excel Calculation	Excel calculation will be provided. Therefore, this criterion is clearly set out and it is verifiable.
13	<u>Crediting Period</u> The CPA will have a renewable crediting period.	The type of crediting period is renewable as shown in section A.9.2	Section A.9.2 will include this information. Therefore, this criterion is clearly set out and it is verifiable.
14	<u>Public Funding</u> The CPA will confirm that it is not receiving funding dedicated as Official Development Assistance (ODA) through a two-stage process. The first stage is a statement by the CPA Implementer if it is receiving public funding. If the CPA is receiving public funding second statement is required from the funder affirming that the public funding is not ODA	A statement that the activity is not receiving public funding or the public funding is not ODA is shown in Appendix 2	Therefore, this criterion is clearly set out and it is verifiable.
15	<u>CME Approval</u> The CPA will prove it has received the approval of the CME of the PoA or state the CPA Implementer and the CME are the same	A letter showing the CME has approved the CPA or a statement in section E that the CME and CPA Implementer are the same	A letter will be provided. Therefore, this criterion is clearly set out and it is verifiable.
16	<u>Target Group</u> The CPA targets households or institutions/SMEs	Target groups are households or institutions as shown in section B.2	Section B.2 will show this information. Therefore, this criterion is clearly set out and it is verifiable.
17	<u>Sampling</u> The CPA will adhere to the sampling requirements stipulated by the CME in section C of the PoA-DD	Adherence to the sampling requirements of the PoA is shown in section D.7.2	For the proposed POA, the submission of the monitoring plan is delayed and submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the

			first monitoring period. There is no additional background information available at this time, and this is in accordance with paragraph 62 of the CDM project Standard (version 09).
18	<u>Stakeholder Consultation and Environmental Analysis</u> The Local Stakeholder Consultation and Environmental Impact Analysis have been conducted at the PoA level. Each CPA will take into consideration the comments from the Stakeholder Consultation and abide by the environmental regulations of the host country	Consideration of the comments from Local Stakeholder Consultation, and a statement that the CPA will adhere to the environmental regulations of the host country as shown in section B.1 and C.1 of the CPA	Section B.1 and C.1 of the CPA will show this information. Therefore, this criterion is clearly set out and it is verifiable.
19	<u>Distribution</u> The CPA will use one or multiple of the following methods for distribution of appliances implemented under the CPA: 1. Direct sale/service to end-users 2. Bulk sales to distributors who sell on to the end user Distribution to the end-user by an organization receiving the products/measures from the CME	Description of the distribution method is provided in section A.3	Therefore, this criterion is clearly stated in accordance with paragraph 18 (i) of the Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities.
20	<u>CER Ownership</u> The CPA will assure ownership of the CERs is secured by the CME	A statement by the CPA Implementer that it has yielded the rights to any CERs to the CME and that the CPA Implementer will ensure any distributors, manufacturers, or service providers cede their rights to the resulting CERs as well	A statement by the CPA Implementer will be provided. Therefore, this criterion is clearly set out and it is verifiable.

B.5. Estimation of emission reductions or net GHG removals by sinks of the generic CPA

B.5.1. Explanation of methodological choices

Means of validation	<p>The validation team has reviewed the generic CPA assessing the adequate justification of options and equations taken based on the choice of the baseline scenario and context of the CPA in accordance with the applied methodology:</p> <p><u>CPAs type 5 - AMS-I.B:</u></p> <p>In line with AMS-I.B section 5.3. Baseline emissions, this CPA will apply Option (a)(ii), para. 16 to calculate baseline emissions: "For the fossil fuel consumption to produce mechanical power in the baseline scenario... [calculate baseline emissions as] the fossil fuel consumption per hour, conservatively converted to diesel fuel hourly consumption rate, times hours of operation per year times the default value for the emission coefficient for diesel fuel i.e. 0.0032 t CO₂ per</p>
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	<p>kg of diesel fuel.” The following equation will be applied:</p> $BE_y = \sum_i N_{i,y} * FUR_i * O * U * EF$ <p>Where</p> <p>BE_y Baseline emissions, tCO₂</p> <p>$N_{i,y}$ Number of solar pump units of type i in year y</p> <p>FUR_i Fuel use rate for units of type i, kg fuel/hr</p> <p>O Utilization rate, hr/day</p> <p>U Annual utilization, days/year</p> <p>EF Fuel emissions factor, t CO₂/kg fuel</p> <p>Since the application does not involve generation of electricity in addition to mechanical energy, the above are the only baseline emissions that will be calculated.</p> <p>In line with para. 17, project emissions consist of CO₂ emissions from consumption of diesel and CO₂ emissions from consumption of electricity not generated from the project activity (if applicable). These sources are both considered zero, since project solar pumps will not utilize diesel, nor will consume electricity from outside sources. Therefore $PE_y = 0$.</p> <p>In line with para. 19, since no biomass is sourced under the project activity leakage is considered zero.</p> <p>Leakage is also zero from other potential sources, since the project does not use biomass, the projects are not capacity additions, and existing units, where applicable, used diesel and not renewable resources.</p> <p>Annual emission reductions are calculated as per para. 20, as follows.</p> $ER_y = BE_y - PE_y$ <p>Where</p> <p>ER_y Emission reductions in year y (tCO₂e)</p> <p>PE_y Project emissions in year y (tCO₂e)</p>
Findings	No finding has been raised.
Conclusion	<p>The application of the baseline methodology has been transparently detailed in the generic CPA. The consideration of the leakages, the boundaries of the CPA and the calculations are in accordance with the provisions of the relevant methodology. The guidelines for the application of the methodology in the POA are correctly detailed in each generic CPA.</p> <p>The generic CPA confirms to meet the procedures provided in the methodology and PoA-DD. The formulae are correctly presented for the determination of emission reductions. The assumptions and data used to determine the emission reductions are listed in the generic CPA and all the sources have been detailed. In summary, the calculations of emission reductions are considered to be correct and according to requirements stated in the applied methodology and POA.</p> <p>Therefore, AENOR, based on the above assessment, confirms that:</p> <ul style="list-style-type: none"> • All assumptions and data used by the project participants are listed in the generic CPA, including their references and sources; • All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the CPA; • All values used in the generic CPA are considered reasonable in the context of the proposed CDM Programme of Activities;

	<ul style="list-style-type: none"> The baseline methodology have been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions; and All estimates of the baseline emissions can be replicated using the data and parameter values provided in the generic CPA.
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B.5.2. Data and parameters fixed ex ante

Means of validation	<p>The list of parameters fixed ex ante has been correctly detailed in the CPA. It has been crosschecked against the applied methodology and related POA-DD. The parameters are:</p> <p><u>CPAs type 5 - AMS-I.B:</u></p> <ul style="list-style-type: none"> <i>EF</i>: Fuel emissions factor. This is a default value of 0.0032 t CO₂ per kg of diesel fuel obtained from the methodology. <i>FUR_i</i>: Fuel use rate for units of type i. The fuel use rate applied corresponds to that of an equivalent diesel pump, where equivalency is determined in terms of the operating characteristics (head v/s discharge and efficiency).
Findings	No finding has been raised.
Conclusion	<p>The list of fixed parameters above detailed is considered complete and in accordance with applied methodology and the related POA.</p> <p>All the data are derived from official data sources or replicable records and have been correctly quoted. All data sources and assumptions are appropriate and calculations are correct as applicable to generic CPA, and will result in an accurate or otherwise conservative estimate of the emission reductions, therefore, in accordance with paragraph 142 of the CDM Validation and Verification Standard.</p>

B.5.3. Ex ante calculation of emission reductions or net GHG removals by sinks

Means of validation	AENOR has validated that data and assumptions considered and listed in the generic CPA are consistent with stated data, methodology and type of CPA.
Findings	No finding has been raised.
Conclusion	The equations and formulae used for the ex-ante calculation are consistent with the methodology applied in the CPA. Steps taken and the equations and parameters applied in the generic CPA to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology.

B.6. Application of the monitoring methodology and description of the monitoring plan

Means of validation	For the proposed Programme of Activities, the submission of the monitoring plan is delayed and will be submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. This option is stated in accordance with paragraph 62 of the CDM project standard (version 09.0).
Findings	No findings have been detected
Conclusion	Not applicable since project participants have decided that the submission of monitoring plan is delayed and that the PoA-DD and CPA-DD submitted for

	registration do not contain information related to the monitoring plan.
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B.6.1. Data and parameters to be monitored by the generic CPA

Means of validation	For the proposed Programme of Activities, the submission of the monitoring plan is delayed and will be submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. This option is stated in accordance with paragraph 62 of the CDM project standard (version 09.0).
Findings	No findings have been detected
Conclusion	Not applicable since project participants have decided that the submission of monitoring plan is delayed and that the PoA-DD and CPA-DD submitted for registration do not contain information related to the monitoring plan.

B.6.2. Description of the monitoring plan for the generic CPA

Means of validation	For the proposed Programme of Activities, the submission of the monitoring plan is delayed and will be submitted either at any time prior to the submission of request for issuance for the first monitoring period, or together with the request for issuance for the first monitoring period. This option is stated in accordance with paragraph 62 of the CDM project standard (version 09.0).
Findings	No findings have been detected
Conclusion	Not applicable since project participants have decided that the submission of monitoring plan is delayed and that the PoA-DD and CPA-DD submitted for registration do not contain information related to the monitoring plan.

Appendix 1. Abbreviations

Abbreviations	Full Texts
AENOR	Spanish Association for Standardization and Certification
AMS-III.AR	Substituting Fossil Fuel Based Lighting with LED/CFL Lighting Systems - Version 5
AMS-I.F	Renewable electricity generation for captive use and mini-grid Version 3
AMS-I.L	Electrification of rural communities using renewable energy Version 3
AMS-I.B	Mechanical energy for the user with or without electrical energy Version 12
CAR	Corrective action request
CL	Clarification Request
CDM	Clean Development Mechanism
CDM-CPA-DD	CDM Component Project Activity Design Document.
CDM-PoA-DD	CDM Programme Of Activities Design Document
CER	Certified emission reductions
CME	Coordinating and Managing Entity
CPA	Component Project Activity
DBE	Development Bank of Ethiopia
DBT	Run time per day of solar charging
DNA	Designated National Authority
EB	Executive Board of the CDM of the Kyoto Protocol
EIA	Environmental Impact Assessment
GHG	Greenhouse Gas
FAR	Forward Action Request
GSC	Global stakeholder consultation process
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring plan

MWh	Megawatt hour
NGO	Non-Governmental Organization
POA	Programme of Activities
PP	Project Participant
tC	Tonnes of carbon
TJ	Terajoule
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and verification Standard

Appendix 2. Competence of team member and technical reviewer(s)

Subject: Validation and Technical Review Team for Project: **“Ethiopia Off-Grid Renewable Energy Program”**

Madrid, 13th June 2016

Hereby I confirm the following records of qualification, according with AENOR internal instruction “Validation, Verification and Certification of Clean Development Mechanism (CDM) project activities” IE-DTC-039, and in relation with the validation process of the above mentioned project activity:

Name: **Luis Robles Olmos**

CDM Team leader: Yes

CDM Validator: Yes

CDM Verifier: N/A

External Technical Expert: N/A

Technical areas related with the project activity:

TA 1.2: Renewables



M^a Carmen González Galán
Authorized person

Subject: Validation and Technical Review Team for Project: **“Ethiopia Off-Grid Renewable Energy Program”**

Madrid, 13th June 2016

Hereby I confirm the following records of qualification, according with AENOR internal instruction “Validation, Verification and Certification of Clean Development Mechanism (CDM) project activities” IE-DTC-039, and in relation with the validation process of the above mentioned project activity:

Name: **Jose Antonio Gesto Vilacoba**

CDM Team leader: N/A

CDM Validator: Yes

CDM Verifier: N/A

External Technical Expert: N/A

Technical areas related with the project activity:

TA 1.2: Renewables



Luis Robles Olmos
Climate Change Manager

Subject: Validation and Technical Review Team for Project: **“Ethiopia Off-Grid Renewable Energy Program”**

Madrid, 13th June 2016

Hereby I confirm the following records of qualification, according with AENOR internal instruction “Validation, Verification and Certification of Clean Development Mechanism (CDM) project activities” IE-DTC-039, and in relation with the validation process of the above mentioned project activity:

Name: **Elena Llorente Pérez**

CDM Team leader: n/a

CDM Validator: Yes

CDM Verifier: N/A

External Technical Expert: N/A

Technical areas related with the project activity:

TA 1.2: Renewables



Luis Robles Olmos
Climate Change Manager

Subject: Validation and Technical Review Team for Project: **“Ethiopia Off-Grid Renewable Energy Program”**

Madrid, 13th June 2016

Hereby I confirm the following records of qualification, according with AENOR internal instruction “Validation, Verification and Certification of Clean Development Mechanism (CDM) project activities” IE-DTC-039, and in relation with the validation process of the above mentioned project activity:

Name: **Manuel García-Rosell**

CDM Team leader: n/a

CDM Validator: n/a

CDM Verifier: N/A

CDM Technical reviewer: Yes

External Technical Expert: N/A

Technical areas related with the project activity:

TA 1.2: Renewables



Luis Robles Olmos
Climate Change Manager

Subject: Validation and Technical Review Team for Project: **“Ethiopia Off-Grid Renewable Energy Program”**

Madrid, 13th June 2016

Hereby I confirm the following records of qualification, according with AENOR internal instruction “Validation, Verification and Certification of Clean Development Mechanism (CDM) project activities” IE-DTC-039, and in relation with the validation process of the above mentioned project activity:

Name: **M^a Carmen González Galán**

CDM Team leader: Yes

CDM Validator: Yes

CDM Verifier: N/A

CDM Technical reviewer: Yes

External Technical Expert: N/A

Technical areas related with the project activity:

TA 1.2: Renewables



Luis Robles Olmos
Climate Change Manager

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	AENOR	IE-DTC-039 - Validation, verification and certification of clean development mechanism (CDM) project activities.		AENOR
2	DBE	CDM SSC PoA-DD Ethiopia Off-Grid Renewable Energy Program	Version 1.0	DBE
3	DBE	CDM SSC PoA-DD Ethiopia Off-Grid Renewable Energy Program	Version 6.0	DBE
4	DBE	Final DBE Off-grid renewable energy solar lamps CPA 1 CPA-DD.	Version 5.0	DBE
5	UNFCCC	.AMS-III.AR Substituting fossil fuel based lighting systems	Version 5	UNFCCC
6	UNFCCC	AMS-I.F Version 3 Renewable electricity generation for captive use and mini-grid	Version 3	UNFCCC
7	UNFCCC	AMS-I.L Version 3 Electrification of rural communities using renewable energy	Version 3	UNFCCC
8	UNFCCC	AMS-I.B Version 12 Mechanical energy for the user with or without electrical energy	Version 12	UNFCCC
9	UNFCCC	Decision 3/CMP.1 and relevant decisions and guidelines from the EB.		UNFCCC
10	UNFCCC	Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities	Version 04.0	UNFCCC

11	UNFCCC	Clean Development mechanism project standard.	Version 09.0.	UNFCCC
12	UNFCCC	Clean development mechanism project cycle procedure	Version 09.0.	UNFCCC
13	UNFCCC	CDM Validation and Verification Standard	Version 09.0.	UNFCCC
14	DBE	Spreadsheet for the ERs calculation of Off-grid renewable energy solar lamps.		DBE
15	UNFCCC	Instructions for filling out the validation report form for CDM Programme of activities		UNFCCC
16	UNFCCC	Guidelines on Assessment of De-bundling for SSC Project Activities		UNFCCC-
17	World Bank	Project Appraisal Document		DBE
18	DBE	Agreement between CME and CPA implementer		DBE
19	DBE	PIN Ethiopia Off grid		DBE
20	World Bank	World Bank project Appraisal document – DBE cooperation on carbon finance		World Bank
21	EPA	Ethiopian Environmental Law		EPA
22	Ministry of Environment and forest	EIA Waiver		DBE
23	DBA	Local Stakeholder Consultation Report	26th November 2014	DBE
24	DBE	Lamp sales receipt		DBE
25	UNFCCC	Glossary of terms.		UNFCCC
26	IPCC	2006 IPCC Guidelines on National GHG inventories		IPCC
27	Lighting Global	Technical specification of Lamps		DBE
28	DBE	Sample form		DBE
29	Ministry of Environment, forest and climate change	Letter of Approval for the Off-Grid PoA		DBE

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

Table 1. CL from this validation

CL ID	CL 1	Section no.	A.2	Date: 27/03/2015
Description of CL				
A Timeline of the project is required to check the consistency of the timeline proposed				
CME response				Date: 07/12/2015
A timeline of the PoA has been provided.				
Documentation provided by CME				
Schedule of the project implementation				
DOE assessment				Date: 30/12/2015
Clarification is appropriate regarding project implementation. Documentation provided is consistent with it as well, therefore, CL is clarified .				

CL ID	CL 2	Section no.	A.2	Date: 27/03/2015
Description of CL				
Evidences that the Programme description is in compliance with the actual situation or planning shall be provided to the validation team.				
CME response				Date: 07/12/2015
Reference has been provided in the form of the World Bank agreement confirming the status of the project and anticipated timeline.				
Documentation provided by CME				
The World Bank and DBE agreement has been provided.				
DOE assessment				Date: 30/12/2015
Clarification is appropriate regarding the planning of the PoA. Documentation provided is consistent with it as well, therefore, CL is clarified .				

CL ID	CL 3	Section no.	A.2	Date: 27/03/2015
Description of CL				
A schedule for the implementation of the SSC-PoA is required.				
CME response				Date: 07/12/2015
The roll-out schedule for the technologies covered by the PoA is provided				
Documentation provided by CME				
Schedule of the project implementation				
DOE assessment				Date: 30/12/2015
Clarification is appropriate regarding project implementation. Documentation provided is consistent with it as well, therefore, CL is clarified				

CL ID	CL 4	Section no.	E	Date: 27/03/2015
Description of CL				
Letter from Ethiopia's Environmental Authority has to be included Appendix 4.				
CME response				Date: 07/12/2015
The EIA Waiver has been provided				
Documentation provided by CME				
The EIA Waiver				
DOE assessment				Date: 30/12/2015
Clarification is appropriate regarding the environmental aspects of the PoA. Documentation provided is consistent with it as well, therefore, CL is clarified .				

CL ID	CL 5	Section no.	F	Date: 27/03/2015
Description of CL				
It should be clarified if stakeholder consultations process it is required for mini hydroelectricity plants.				
CME response				Date: 07/12/2015
The eligibility criteria for CPAs covering micro-hydro activities have been revised to require a LSC at the CPA level to compliment the LSC at the PoA level.				
Documentation provided by CME				

LSC	
DOE assessment	Date: 30/12/2015
Clarification is appropriate regarding the stakeholder consultation of the PoA. Documentation provided is consistent with it as well, therefore, CL is clarified .	

Table 2. CAR from this validation

CAR ID	CAR 1	Section no.	G	Date: 27/03/2015
Description of CAR				
Letter of Approval from Ethiopia shall be provided to the validation team				
CME response				Date: 07/12/2015
Letter of approval has been provided				
Documentation provided by CME				
Letter of approval				
DOE assessment				Date: 30/12/2015
Documentation has been provided and it is considered correct. CAR is closed .				

CAR ID	CAR 2	Section no.	A.1	Date: 27/03/2015
Description of CAR				
The information on project participants should be clearly described in Appendix I				
CME response				Date: 07/12/2015
Contact information has been updated				
Documentation provided by CME				
Not applicable				
DOE assessment				Date: 30/12/2015
The information has been correct included. CAR is closed .				

CAR ID	CAR 3	Section no.	B.4	Date: 27/03/2015
Description of CAR				
The criteria of eligibility are not complete.				
The eligibility criteria shall be developed and updated in accordance with:				
Conditions that avoid double counting of emission reductions like unique identifications of product and end-user locations (e.g. programme logo): The PP has to provide the way to clear how the systems are included in the PoA, such as logo, stickers, public database, etc.				
The PP is kindly requested to provide for each criteria, the files, evidence, documents, etc, that will be used to demonstrate that the criteria is met.				
CME response				Date: 07/12/2015
Description of the eligibility criteria for double counting has been revised. Evidence to be provided for certain eligibility criteria has been added.				
Documentation provided by CME				
Excel calculation				
DOE assessment				Date: 30/12/2015
Documentation has been provided and it is considered correct. CAR is closed .				

CAR ID	CAR 4	Section no.	C	Date: 27/03/2015
Description of CAR				
Provisions for meeting training and maintenance needs shall be included in the SSC-PoA-DD				
CME response				Date: 07/12/2015
Provisions for training and maintenance have been added in section C of the PoA-DD.				
Documentation provided by CME				
Not applicable				
DOE assessment				Date: 30/12/2015
Provisions for training have been included in the PoA-DD. CAR is closed.				

CAR ID	CAR 5	Section no.	B.1	Date: 27/03/2015
Description of CAR				
The version of the methodologies should be updated to the most recent ones.				
CME response				Date: 07/12/2015
The versions of the methodology have been updated.				
Documentation provided by CME				
Not applicable				
DOE assessment				Date: 30/12/2015
Version of the methodology has been updated in the PoA-DD. CAR is closed.				

CAR ID	CAR 6	Section no.	B.1	Date: 27/03/2015
Description of CAR				
Provisions regarding the updating of the CPAs in case of held or withdrawal of the methodologies shall be taken into account in the PoA-DD				
CME response				Date: 07/12/2015
Provisions have been added in section C of the PoA-DD				
Documentation provided by CME				
Not applicable				
DOE assessment				Date: 30/12/2015
Provisions have been included in the PoA-DD, and it is considered correct. CAR is closed.				

CAR ID	CAR 7	Section no.	C	Date: 27/03/2015
Description of CAR				
The date and the responsible of the baseline and monitoring settling should be updated. This section refers to the completion of the baseline of the POADD				
CME response				Date: 07/12/2015
The date and the entity responsible have been included in the PoA.				
Documentation provided by CME				
Not applicable				
DOE assessment				Date: 30/12/2015
The date and entity have been included in the PoA-DD., and it is considered correct CAR is closed.				

