



**Programme design document form for
CDM programmes of activities
(Version 06.0)**

Complete this form in accordance with the Attachment "Instructions for filling out the programme design document form for CDM programmes of activities" at the end of this form.

PROGRAMME DESIGN DOCUMENT (PoA-DD)

Title of the PoA	MKOPA Solar Lighting Programme of Activities
Version number of the PoA-DD	2.0
Completion date of the PoA-DD	17 January 2017
Coordinating/ managing entity	MKOPA Solar LLC
Host Party(ies)	Kenya, Uganda, Tanzania [Additional Countries]
Applied methodology(ies) and, where applicable, applied standardized baseline(s)	AMS-III.AR v5.0
Sectoral scope(s) linked to the applied methodology(ies)	1 Energy industries (renewable - / non-renewable sources)

PART I. Programme of activities (PoA)

SECTION A. General description of PoA

A.1. Title of the PoA

>>

Title: MKOPA Solar Lighting Programme of Activities

Version: 2.0

Date: 17 January 2017

A.2. Purpose and general description of the PoA

>>

Policy/measure or stated goal that the PoA seeks to promote

The MKOPA Solar Lighting Programme of Activities (the PoA) aims to distribute solar lighting systems to households throughout Africa. The use of the solar lighting systems will enable households to switch from high-cost kerosene to affordable, safe, off-grid renewable solar power. The utilization of the systems will reduce the amount of fossil fuel-based domestic energy needs, which will contribute to a reduction in greenhouse gas (GHG) emissions.

The proposed PoA applies the approved small-scale baseline and monitoring methodology AMS-III.AR “Substituting fuel based lighting with LED/CFL lighting systems”. This methodology is applicable because the programme will involve the replacement of portable fossil fuel lamps (wick-based kerosene lanterns) with chargeable solar units.

According to the market baseline report commissioned by Lighting Africa, a joint initiative from the IFC and the World Bank, there are “approximate 110 million off-grid households across Africa (encompassing 580 million individuals), more than half [of which] employ the use of kerosene lamps as their primary light source”¹. The study adds that many on-grid households also rely on fuel-based lighting due to very poor quality grid connections.

The technology that will be used in this PoA is MKOPA Solar developed by the MKOPA team in Kenya. It is a solar lighting system that offers clean lighting solutions to households that are not connected to the electricity grid. The solar lighting system comes with three LED solar lights, one of which can also be used as a torch, and a solar panel with a smart-charge-control lithium-ion battery system. In addition, households may also be provided with a solar rechargeable radio and a mobile phone charging cable. The system comes with a 2-year warranty on the battery system.



¹ “Solar Lighting for the Base of the Pyramid – Overview of an Emerging Market”, Lighting Africa, Oct 2010 (see <https://www.lightingafrica.org/resources/market-research/market-trends/>).

Mobile payments technology built into the solar lighting systems is used to provide consumer financing for these energy products and services. The consumers make payments through the mobile money service M-PESA in Kenya and Tanzania, or similar services in elsewhere, on a “Pay-As-You-Go (PAYG) basis”, which effectively provides microfinancing particularly to low income users. Under the current business model, consumers pay an initial deposit followed by 365 daily payments, which can be made in flexible increments to better match the cash flows of low income households.

Framework for the implementation of the proposed PoA

Each CPA under this PoA will distribute solar lighting systems in a single country in Africa, with additional CPAs being proposed when the programme expands. Initial implementation will take place in Kenya, Uganda and Tanzania. A maximum of [217,391] solar lighting systems are distributed in each CPA.

Confirmation that the PoA is a voluntary action by the CME

MKOPA Solar LLC is the co-ordinating/managing entity (CME) of this PoA. The PoA is a voluntary action by the CME.

Brief description of how the proposed PoA contributes to sustainable development

In addition to achieving GHG emission reductions (SDG 13), this PoA contributes to sustainable development in the following ways:

- the solar lights provide access to affordable, reliable, sustainable and modern energy (SDG target 7.1);
- the solar lighting systems significantly reduce indoor air pollution associated with the use of kerosene lighting, thereby improving the health of users (SDG targets 3.9);
- savings on the expenditure on kerosene may be utilised by households for buying food, and education;
- the mobile payment technology effectively provides a microfinance solution for all household users; (SDG target 1.4)
- the addition of a radio and mobile phone charging options provides access to appropriate new technology (SDG target 1.4)
- the solar lights provide better light than the kerosene lights they replace; and
- the solar lights are safer than kerosene, thus there will be fewer injuries/burns.

A.3. CME and participants of PoA

>>

- a) MKOPA Solar LLC is the co-ordinating/managing entity (CME) of this PoA.
- b) Natural Capital Partners Europe Limited is a project participant in this PoA, and acts as consultant.

A.4. Party(ies)

Name of Party involved (“host” indicates host Party)	Private and/or public entity(ies) project participants, CME (as applicable)	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
Kenya (host)	MKOPA Solar LLC	No
UK	Natural Capital Partners Europe Limited	No

A.5. Physical/ Geographical boundary of the PoA

>>

The boundary of the PoA is Africa, with each CPA limited to a single country. The initial focus is on Kenya, Uganda and Tanzania.

A.6. Technologies/measures

>>

Through the implementation of CPAs, this PoA will promote the distribution of solar lighting systems to households throughout Africa. The use of the solar lighting systems will enable households to switch from high-cost kerosene to affordable, safe, off-grid renewable solar power.

Sectoral Scope: 1. Energy industries (renewable / non-renewable sources)

Scale: Small-scale

Applicable methodology: AMS-III.AR

The proposed PoA applies the approved small-scale baseline and monitoring methodology AMS-III.AR "Substituting fuel based lighting with LED/CFL lighting systems". This methodology is applicable because the programme will involve the replacement of portable fossil fuel lamps (wick-based kerosene lanterns) with chargeable solar units.

A.7 Public funding of PoA

>>

None. The required funds are raised by the CME.

SECTION B. Demonstration of additionality and development of eligibility criteria

B.1. Demonstration of additionality for PoA

>>

In accordance with EB Guidelines², automatic additionality applies to project activities solely composed of isolated units where (i) the users of the technology/measure are households or communities or Small and Medium Enterprises (SMEs) and where (ii) the size of each unit is no larger than 5% of the small scale CDM thresholds³.

The solar panel has a capacity (Wattage) of 8 Wp⁴, and each system reduces emissions by 0.276 tonnes of CO₂ per year only⁵, in accordance with the methodology, which is far below the threshold.

B.2. Eligibility criteria for inclusion of a CPA in the PoA

>>

The eligibility criteria for inclusion of a CPA under the PoA have been provided below in accordance with the "Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities"⁶.

² Methodological tool "Demonstration of additionality of small-scale project activities", version 10.0 (EB83 Annex 14) para 11 (c).

³ That is the size of each unit under 750 kW installed capacity, 3,000 MWh of energy savings per year, or 3,000 tonnes of emission reductions per year.

⁴ The panel capacity may vary during the crediting period of the PoA.

⁵ Each system has 3 lamps, 0.092 tCO₂e/y for each lamp according to the methodology default.

⁶ Standard "Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities", version 04.0 (EB87, Annex 3).

No.	Criteria	Condition
(a)	The geographical boundary of the CPA including any time-induced boundary consistent with the geographical boundary set in the PoA	The geographical boundary of each CPA includes at most a single country within Africa.
(b)	Conditions that avoid double counting of emission reductions like unique identifications of product and end-user locations (e.g. programme logo)	Each solar lighting system is marketed with the CME's name and/or logo. Each system has a unique serial number linked to a single customer and is recorded in the project database.
(c)	The specifications of technology/measure including the level and type of service, performance specifications including compliance with testing/certifications	The CPAs distribute solar lighting systems, each of which complies with the technology eligibility criteria in the methodology.
(d)	Conditions to check the start date of the CPA through documentary evidence	The start date of the CPAs is on or after the start date of the PoA. The project database records the sales date of each system.
(e)	Conditions that ensure compliance with applicability and other requirements of single or multiple methodologies applied by CPAs	The applicability with the methodology is specified in Part II. B.2.
(f)	The conditions that ensure that the CPA meets the requirements pertaining to the demonstration of additionality	The CPAs are automatically additional as described in Section B.1, above.
(g)	The PoA-specific requirements stipulated by the CME including any conditions related to undertaking local stakeholder consultations and environmental impact analysis	The stakeholder consultation is conducted at the PoA level. No environmental impact assessment is required.
(h)	Conditions to provide an affirmation that funding from Annex I Parties, if any, does not result in a diversion of official development assistance	A confirmation will be included in each CPA-DD.
(i)	Where applicable, target group (e.g. domestic/commercial/industrial, rural/urban, grid-connected/off-grid) and distribution mechanisms (e.g. direct installation)	Each CPA will use one or more of the following methods for distribution: 1. Direct sale to end-users; 2. Distribution to the end-user by an organization receiving the products/measures from the CME.
(j)	Where applicable, the conditions related to sampling requirements for the PoA in accordance with the "Standard for sampling and surveys for CDM project activities and programme of activities"	It is anticipated that all systems are monitored. However, if sampling is applied parameter values shall be estimated by sampling in accordance with the requirements in the applied methodology separately and independently for each of the CPAs included in a PoA except when a single sampling plan covering a group of CPAs is undertaken applying 95/10 confidence/precision for the sample size calculation.
(k)	Where applicable, the conditions that ensure	Each CPA includes the calculated maximum

	that every CPA meets the small-scale or microscale threshold and remains within those thresholds throughout the crediting period of the CPA. However, for a CPA that consists of only units that qualify as 'microscale CDM units' as defined in the methodological tool "Demonstration of additionality of microscale project activities", this condition is not required	number of systems, and therefore remains within the small-scale threshold.
(l)	Where applicable, the requirements for the debundling check, in case the CPA belongs to small-scale or microscale project categories. However, if a CPA solely consists of 'microscale CDM units', the requirement regarding debundling is not applicable	Each of the independent systems included in the CPAs is no larger than 1% of the small-scale thresholds defined by the methodology applied, ⁷ therefore they are considered as not being a de-bundled component of a large scale activity. ⁸

B.3. Application of technologies/measures and methodologies

>>

Through the implementation of CPAs, this PoA will promote the distribution of solar lighting systems to households throughout Africa. The use of the solar lighting systems will enable households to switch from high-cost kerosene to affordable, safe, off-grid renewable solar power.

Sectoral Scope: 1. Energy industries (renewable / non-renewable sources)

Scale: Small-scale

Applicable methodology: AMS-III.AR

The proposed PoA applies the approved small-scale baseline and monitoring methodology AMS-III.AR "Substituting fuel based lighting with LED/CFL lighting systems". This methodology is applicable because the programme will involve the replacement of portable fossil fuel lamps (wick-based kerosene lanterns) with chargeable solar units.

B.4. Date of completion of application of methodology and standardized baseline and contact information of responsible person(s)/ entity(ies)

>>

Date of completion of application of the selected methodology: 15/08/2016.

Contact information of the person/entity responsible for the application of the selected methodology:

Christiaan Vrolijk
 Natural Capital Partners
 167 Fleet Street, London EC4A 2EA, UK
cvrolijk@naturalcapitalpartners.com

SECTION C. Management system

>>

⁷ 15 kW installed capacity or 0.6 GWh annual energy savings or 0.6 ktCO₂e annual emission reductions.

⁸ Methodological tool "Assessment of debundling for small-scale project activities", Version 04.0 (EB83, Annex 13).

MKOPA Solar LLC is the Co-ordinating / Managing Entity (CME) for the PoA. It is anticipated that the CPA Implementers will be the national operating entities of MKOPA Solar LLC, in the specific countries where the CPAs are implemented.

In accordance with the PoA Standard⁹, the CME has developed and implemented a management system that includes the following:

(a) A clear definition of roles and responsibilities of personnel¹⁰ involved in the process of inclusion of CPAs, including a review of their competencies

The entities involved in the process of inclusion of CPAs are shown below.

Entity/Role	Responsibility	Competency
CME	<ul style="list-style-type: none"> • Manages the review process of the documentation submitted by the CPA implementer for inclusion of the proposed CPA • Notifies the CPA Implementer of acceptance or rejection of the proposed CPA 	<ul style="list-style-type: none"> • Previous experience overseeing and implementing training and managing information databases
Consultant	<ul style="list-style-type: none"> • Advises the CPA Implementer in the preparation of the required documentation for inclusion of the CPA under the PoA and performs the initial review of the documentation • Review UNFCCC database and CME’s CPA database to no double-counting 	<ul style="list-style-type: none"> • Previous experience with greenhouse gas emission reduction activities, including similar projects
CPA Implementer	<ul style="list-style-type: none"> • Applies for inclusion of the CPA under the PoA to the CME by submitting the completed CPA-DD and all supporting material 	<ul style="list-style-type: none"> • Previous experience implemented activities similar to those proposed in the CPA

(b) Records of arrangements for training and capacity development for personnel

The CME shall maintain records of any training and capacity building exercises for its own personnel and CPA Implementers’ personnel.

(c) A procedure for technical review of inclusion of CPAs

A technical team shall be constituted by the CME to check compliance of new CPAs proposed for inclusion under the PoA. All eligibility criteria for inclusion of new CPAs in the CPA as provided in section B.2 of this document shall be checked against any of the suggested documentary evidence sources provided in the same section. The team shall consist of professionals with sufficient competence to assess eligibility of CPAs for inclusion under the PoA. The team may hire consultants, if deemed necessary, for this purpose.

(d) A procedure to avoid double counting (e.g. to avoid the case of including a new CPA that has already been registered either as a CDM project activity or as a CPA of another PoA);

The CME ensures that each CPA being proposed for inclusion in the PoA does not result in double-counting of emission reductions. This is confirmed through the application of eligibility

⁹ Standard “Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities” Version 04.0 (EB87 Annex 3, para 21).

¹⁰ It is not necessary to specify the names of personnel, but the descriptions of functions are required.

criterion (b) in B.2. In addition, the CME will also check the Gold Standard, CDM and VCS databases to confirm no double counting.

(e) Records and documentation control process for each CPA under the PoA

The CME will operate and manage an electronic data management system that will store information on and track all CPAs. The information will include at least the following:

- CPA Implementer
- CPA Title
- Date of inclusion of the CPA
- Start date of the CPA
- Emission reductions generated under the CPA to date
- Quantity of systems disseminated under the CPA to date.

(f) Measures for continuous improvements of the PoA management system¹¹

The CME shall conduct any training and capacity building exercises for its own personnel and CPA Implementers' personnel based on any identified needs to ensure that continuous improvements of the PoA management system are taking place.

(g) Any other relevant elements

The systems disseminated under the PoA include a household unit with embedded SIM that is used for the management of the consumer payments for the equipment. This SIM can also be used for communication with the central system of the CME to check the operational status of each system.

SECTION D. Duration of PoA

D.1. Start date of PoA

>>
24/09/2014

This is the date of notification of the intention to seek the CDM status by the coordinating/managing entity to the secretariat. However, it has since been decided that no CDM registration is being pursued, but rather registration as a Gold Standard Voluntary PoA.

D.2. Duration of the PoA

>>
28 years

SECTION E. Environmental impacts

E.1. Level at which environmental analysis is undertaken

>>
The environmental analysis has been undertaken at the PoA level.

¹¹ Improvements may include addition or restructuring of functions/posts for which prior approval by the Board is not required as long as the CME is able to demonstrate to the DOE that the deliverables of the management system specified in the registered PoA-DD are fully met.

The CPAs consist of the distribution of solar lighting systems that will displace use of kerosene. The environmental impacts of reduced kerosene consumption are consistent throughout Sub-Saharan Africa and therefore, conducting the Environmental Analysis at the PoA level is considered appropriate.

E.2. Analysis of the environmental impacts

>>

The proposed CPAs will have a positive contribution to the environment through the reduction of consumption of kerosene which will lead to lower greenhouse gas emissions, air pollution, and dependence on fossil fuels.

Each CPA is limited to a specific country. There are no transboundary impacts identified.

E.3. Environmental impact assessment

>>

As the PoA distributes household systems only, there is no requirement to carry out an environmental impact assessment.

SECTION F. Local stakeholder consultation

F.1. Solicitation of comments from local stakeholders

>>

Comments from local stakeholders are solicited at the PoA level in each country where CPAs are being implemented (currently Kenya, Tanzania, and Uganda). Each of the CPAs uses the same technology, and is anticipated to be implemented by the same entity, therefore a single consultation in each country is representative.

A global stakeholder consultation was announced to over 40 organizations including African governmental organizations, companies, NGOs, and the Gold Standard. Participants were invited to submit comments via email, during a live conference call or at an in-person meeting that was held on 1 September 2016.

A local stakeholder consultation meeting for CPAs in Kenya was held from 10.00h on 9 September 2016, in Machakos, Kenya. A further stakeholder meeting was held from 11.00h on 7 December 2016, in Dar-es-Salaam, Tanzania. And a third stakeholder meeting was held from 11.40h on 8 December 2016, in Kampala, Uganda. These meetings each focused on national stakeholders.

A total of 29 participated in the stakeholder consultation meetings. Participants included M-KOPA customers

Additional stakeholder interactions

Given the nature of the programme, the distribution of solar lighting systems to households, these recipient households are the primary stakeholders. The CME/CPA Implementer is in constant contact with its customers through standard customer outreach work as well as special survey work designed to better understand the customer experience with the systems. The standard customer outreach work involves each customer receiving several calls from the customer care team to ensure that they are comfortable with the device and getting optimal usage from it. In addition, the CME currently also conducts a monthly customer satisfaction survey, and occasional more-detailed customer surveys, often conducted by external parties, concerning topics such as income levels and energy usage.

F.2. Summary of comments received

>>

A summary of the stakeholder comments received is presented in the GS Passport document.

F.3. Report on consideration of comments received

>>

A report on the consideration of stakeholder comments received is presented in the GS Passport document.

SECTION G. Approval and authorization

>>

This PoA is proposed as a Gold Standard Voluntary PoA, thus no host country approvals are requested.

PART II. Generic component project activity (CPA)

SECTION A. General description of a generic CPA

A.1. Purpose and general description of generic CPAs

>>

The component project activity aims to distribute solar lighting systems to households in [COUNTRY]. The use of the solar lighting systems will enable households to switch from high-cost kerosene to affordable, safe, off-grid renewable solar power. The utilization of the systems will reduce the amount of fossil fuel-based domestic energy needs, which will contribute to a reduction in greenhouse gas (GHG) emissions.

The proposed CPA applies the approved small-scale baseline and monitoring methodology AMS-III.AR “Substituting fuel based lighting with LED/CFL lighting systems”. This methodology is applicable because the programme will involve the replacement of portable fossil fuel lamps (wick-based kerosene lanterns) with chargeable solar units.

It is expected that the proposed CPA will distribute a total of [217,391] solar lighting systems, with 3 lamps each.

According to the market baseline report commissioned by Lighting Africa, a joint initiative from the IFC and the World Bank, there are “approximate 110 million off-grid households across Africa (encompassing 580 million individuals), more than half [of which] employ the use of kerosene lamps as their primary light source”¹². The study adds that many on-grid households also rely on fuel-based lighting due to very poor quality grid connections.

The technology that will be used in this PoA is MKOPA Solar developed by the MKOPA team in Kenya. It is a solar lighting system that offers clean lighting solutions to households that are not connected to the electricity grid. The solar lighting system comes with [three] LED solar lights, one of which can also be used as a torch, and a [8] Wp solar panel with a smart-charge-control lithium-ion battery system with a capacity of [3.3] Ah. In addition, households may also be provided with a solar rechargeable radio and a mobile phone charging cable. The system comes with a 2-year warranty on the battery system. The lamps are certified by the manufacturer to operate for more than 10,000 hours. Detailed technical specifications of these systems are included in Appendix 3.

¹² “Solar Lighting for the Base of the Pyramid – Overview of an Emerging Market”, Lighting Africa, Oct 2010 (see <https://www.lightingafrica.org/resources/market-research/market-trends/>).



Mobile payments technology built into the solar lighting systems is used to provide consumer financing for these energy products and services. The consumers make payments through the mobile money service M-PESA in Kenya and Tanzania, or similar services in elsewhere, on a “Pay-As-You-Go (PAYG) basis”, which effectively provides microfinancing particularly to low income users. Under the current business model, consumers pay an initial deposit followed by 365 daily payments, which can be made in flexible increments to better match the cash flows of low income households.

Brief description of how the proposed CPA contributes to sustainable development

In addition to achieving GHG emission reductions (SDG 13), this CPA contributes to sustainable development in the following ways:

- the solar lights provide access to affordable, reliable, sustainable and modern energy (SDG target 7.1);
- the solar lighting systems significantly reduce indoor air pollution associated with the use of kerosene lighting, thereby improving the health of users (SDG targets 3.9);
- savings on the expenditure on kerosene may be utilised by households for buying food, and education;
- the mobile payment technology effectively provides a microfinance solution for all household users; (SDG target 1.4)
- the addition of a radio and mobile phone charging options provides access to appropriate new technology (SDG target 1.4)
- the solar lights provide better light than the kerosene lights they replace; and
- the solar lights are safer than kerosene, thus there will be fewer injuries/burns.

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

B.1. Reference of methodology(ies) and standardized baseline(s)

>>

This proposed CPA in this PoA applies the following approved small-scale baseline and monitoring methodology:

Title: “Substituting fuel based lighting with LED/CFL lighting systems”

Reference: AMS-III.AR

Version: 5.0¹³

This methodology also refers to the latest approved versions of the following approved methodologies:

(a) “AMS-I.D.: Grid connected renewable electricity generation”;

¹³ EB81, Annex 31 (28 November 2014)

(b) “AMS-I.F.: Renewable electricity generation for captive use and mini-grid”.¹⁴

B.2. Applicability of methodology(ies) and standardized baseline(s)

>>

Under this CPA solar lighting systems are distributed to households. The use of the solar lighting systems will enable households to switch from high-cost kerosene to affordable, safe, off-grid renewable solar power. The utilization of the systems will reduce the amount of fossil fuel-based domestic energy needs, which will contribute to a reduction in greenhouse gas (GHG) emissions.

Criterion	Justification
2. This category comprises activities that replace portable fossil fuel based lamps (e.g. wick-based kerosene lanterns) with battery-charged light-emitting diode (LED) or compact fluorescent lamps (CFL) based lighting systems ¹⁵ in residential and/or non-residential applications (e.g. ambient lights, task lights, portable lights).	<p>All lighting products under this grouped project are battery-charged LED lighting systems.</p> <p>According to the market baseline report commissioned by Lighting Africa, a joint initiative from the IFC and the World Bank, there are “approximate 110 million off-grid households across Africa (encompassing 580 million individuals), more than half [of which] employ the use of kerosene lamps as their primary light source”¹⁶. The study adds that many on-grid households also rely on fuel-based lighting due to very poor quality grid connections.</p>
3. This methodology is applicable only to project lamps whose batteries are charged using one of the following options: ¹⁷	
(a) Charged by a renewable energy system included as part of the project lamp (e.g. a photovoltaic system or mechanical system such as a hand crank charger);	(a) All lighting products under this grouped project are charged directly from the solar system.
(b) Charged by a standalone distributed generation system (e.g. a diesel generator set) or a mini-grid, i.e. that is not connected to a national or regional grid;	(b) Not applicable
(c) Charged by a grid that is connected to regional/national grid.	(c) Not applicable
4. At a minimum project lamps shall be certified by their manufacturer to have a rated average	

¹⁴ However, in the application of the methodology in this CPA these references are not utilised.

¹⁵ A LED or CFL based lighting system is defined as one or more individual LED or CFL lamps connected to a single rechargeable battery system. These systems may be portable or fixed. LED lamps may consist of one or more diodes. For the purposes of this methodology, a single LED or CFL based lighting system is referred to as the ‘project lamp’ throughout this document.

¹⁶ “Solar Lighting for the Base of the Pyramid – Overview of an Emerging Market”, Lighting Africa, Oct 2010 (see <https://www.lightingafrica.org/resources/market-research/market-trends/>).

¹⁷ Project lamps may be charged by any of the listed options, however each individual project lamp shall be charged by only one of the charging options (for example 10,000 project lamps may be charged by photovoltaic (PV) systems and 10,000 may be charged by a grid, but none of the individual project lamps may be charged by both a grid and a PV system).

operational life of at least (a) 5,000 hours for Option 1;	(a) Not selected.										
(b) 10,000 hours for Option 2.	(b) Option 2 is selected. All lighting products under this grouped project have a manufacturer-certified minimum 10,000 hour average operating life.										
5. Rated average life is the life certified by the manufacturer or responsible vendor as being the time at which the lamp's initial light output will decline by no more than 30 per cent.	The rated average life is certified by the manufacturers.										
In addition, for project lamps charged using option (c), the manufacturer shall certify that the battery-charging-circuit efficiency of the project lamps, at the time of the purchase, is at least 50 per cent. For project lamps charged under option (b), if the mini-grid or distributed generation system is not entirely powered by renewable energy generation unit(s), the manufacturer shall certify that the project lamp's battery charging circuit efficiency, at the time of purchase, is at least 50 per cent.	Not applicable. All lighting products are charged using option (a), i.e. using solar.										
6. Project lamps shall meet warranty requirements of the Lighting Global Minimum Quality Standard. The 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. The warranty shall be clearly communicated and supported through the supply chain and available to end-users of the project lamps during the warranty period. In a situation where the project lamps are distributed through intermediaries, the one year warranty shall commence from the time that the project lamps are distributed to end-users. The full warranty terms shall be available in writing, in a regionally appropriate language and included with each unit.	<p>The systems include a warranty of at least one year on the various components, as indicated below, covering free replacement or repair of any failed lamps, batteries, and where applicable solar panels. The CME operates dedicated regional energy service centers to ensure prompt maintenance and service. Full warranty information is included with the system at the point of sale.</p> <table border="1" data-bbox="820 1279 1374 1534"> <thead> <tr> <th>Component</th> <th>Warrantee period</th> </tr> </thead> <tbody> <tr> <td>Module (panel)</td> <td>2 year</td> </tr> <tr> <td>Charge controller</td> <td>2 years</td> </tr> <tr> <td>Battery</td> <td>2 years</td> </tr> <tr> <td>LED lamps</td> <td>1 year</td> </tr> </tbody> </table>	Component	Warrantee period	Module (panel)	2 year	Charge controller	2 years	Battery	2 years	LED lamps	1 year
Component	Warrantee period										
Module (panel)	2 year										
Charge controller	2 years										
Battery	2 years										
LED lamps	1 year										
7. Project lamps shall meet or exceed the following minimum performance characteristics, which should be proven by third-party test results:	Project lamps meet or exceed the minimum performance characteristics according to third-party test results. The technical specifications of the system are listed in Appendix 3.										
(a) Light Output - luminous flux of 25 lumens or illuminance of 50 lux over an area ≥ 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%;	(a) the light output of each project lamp exceeds 25 lumens (see Appendix 3), as tested in accordance with international standards.										
(b) Run Time and Battery Capacity - Daily Burn Time (DBT) shall meet the following requirements:											

<p>(i) DBT shall be equal to or greater than 4 hours; For charging Option 3(a) with solar PV, the DBT is defined by the Solar Run Time for the project lamp (as determined per paragraph 9(g))</p>	<p>(i) the typical system is designed for at least 4 hours use per day (see Appendix 3, including for the calculated Solar Run Time).</p>
<p>(ii) For other technologies in Option 3(a), the DBT is defined based on typical expected patterns of use.</p>	<p>Not applicable</p>
<p>(iii) For charging Options 3(b) and 3(c): a. The maximum claimed DBT shall be less than or equal to the typical capabilities of the regional or local energy system at delivering reliable power sufficient for recharging; b. The autonomous (full battery) run-time of the project lamps shall be equal to or greater than 200 per cent of the DBT of the project lamps; c. The project lamp shall be fully recharged from a discharged state after eight hours of charging.</p>	<p>Not applicable. All project lamps are solar-charged.</p>
<p>8. The project design document shall explain the proposed distribution method of the project lamps. It shall also explain how the proposed project activity shall:</p>	<p>The distribution method is described in the PoA document.</p>
<p>(a) Ensure that the replaced baseline lamps are those that directly consume fossil fuel. This can be done through documentation of the common practice of fuel usage for lighting in the project region (e.g. based on representative sample surveys, official data or peer reviewed literature) that demonstrates that fossil fuel is a commonly used fuel for lighting;</p>	<p>(a) Kerosene is a commonly used fuel as shown in 2 above.</p>
<p>(b) Encourage the consumers, targeted by the project activity, to use the project lamps and discourage hoarding;</p>	<p>(b) Consumers are encouraged to use projects lamps and discourage hoarding because consumers need to pay for the products. When using microfinance, payments are spread over about 6 to 18 months.</p>
<p>(c) Eliminate potential double counting of emission reductions that could occur, for example, if more than one entity (e.g. lamp manufacturers, suppliers of solar and/or battery equipment, etc.) claims credit for emission reductions for the project lamps. At a minimum, project lamps shall be marked as CDM project lamps;</p>	<p>(c) No CME-branded systems are distributed through other programmes, all products are covered under this PoA. The CME has sole claim on the emission reductions, as established through contracts with its suppliers and consumers.</p>
<p>(d) Ensure compliance with prevailing regulations pertaining to the use and disposal of batteries.</p>	<p>(d) All products comply with prevailing regulations pertaining to the use and disposal of batteries. In additional, the CME has a battery recycling and E-Waste policy in place.</p>
<p>9. The project design document shall include the minimum requirements for the design specifications of project lamps including the following specifications: (a) Lamp wattage (in Watts) and luminous flux output (in lumens); (b) Rated lamp life (in hours);</p>	<p>Each of these design specifications (a) to (g) and (i) of the project lamps are presented in Appendix 3. (h) is not applicable.</p>

<p>(c) Where applicable, the type and rated capacity of the renewable energy equipment used for battery-charging (in Watts); (d) Type (e.g. NiMH, Lead-Acid, Li-ion, Lithium-iron-phosphate, etc.), nominal voltage, and rated capacity of the batteries (in Ampere hours); (e) Type of charge controller (e.g. active or passive); (f) Autonomous time and DBT; (g) Solar Run Times(s) (SRT) for products with solar energy charging systems. If regional solar data are available, the maximum, minimum and average estimated SRT values for each month of a typical year shall be provided. If regional solar data are not available the standard solar day (5 kWh/m²) shall be used to estimate SRT; (h) Where applicable, the amount of time to fully charge the product using mechanical means or a centralized charging system (e.g. the national grid); (i) Physical protection against environmental factors (e.g. rain, heat, insect ingress).</p>	
<p>10. Measures are limited to those that result in emissions reductions of less than or equal to 60 kt CO₂ equivalent annually.</p>	<p>The applicable capacity limits are discussed in the above eligibility criteria.</p>

For all solar lighting products Option 2 is chosen for the lamp effective useful life, therefore the further criteria are also confirmed:

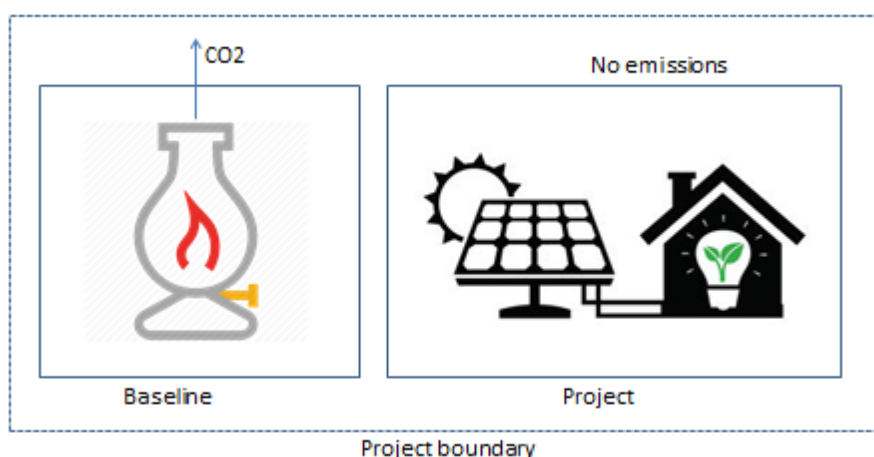
Criterion	Justification
<p>18. Project lamps are assumed to operate for up to seven years after distribution to end-users, and thus emission reductions can be claimed for up to seven years per project lamp, if all of the following conditions are met:</p>	<p>Emission reductions are claimed for a maximum of 7 years per lamp.</p>
<p>(a) Unless specified otherwise in this document, the currently-applicable requirements to meet the Lighting Global Minimum Quality Standards at the time of project application shall be met by project lamps based on IEC/TS 62257-9-5 and IEC 60529, or an equivalent national standard, or the approved norms indicated in paragraph 15(h);</p>	<p>(a) All products have been tested under international standards.</p>
<p>(b) At a minimum, project lamps must be certified by their manufacturer to have a useful operational life of 10,000 hours. Within this time span, the relative luminous flux shall not decrease by more than 30 per cent as per equation (1). Such claims shall be confirmed by a third-party testing organization using an applicable standard and testing protocol. 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</p>	<p>(b) The rated average life is certified by the manufacturers to have a useful operational life of more than 10,000 hours.</p>

<p>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>	
<p>(c) The project lamps use a replaceable, rechargeable battery. In addition, there must be documented measures in place to ensure that lamp owners have access to replacement batteries of comparable quality;</p>	<p>(c) All products use a replaceable rechargeable battery, which is available from the PP to any users.</p>
<p>(d) With regard to physical ingress and water protection, mechanical durability, and the quality of workmanship the project lamps shall achieve a minimum level of protection, based on the type of lamp, in accordance with Lighting Global Minimum Quality Standards, IEC/TS 62257-9-5 and IEC 60529, or an equivalent national standard, or the approved norms indicated in paragraph 15;</p>	<p>(d) The ingress protection (IP) class of the lamp is IP 44.</p>
<p>(e) Compliance with the technical requirements in paragraph 18 are confirmed by a third-party testing organization based on appropriately sampled (random or market-selected) tests 5 of project lamps using applicable national standards where such are available, or alternatively, the standards or test protocols indicated in paragraph 15 of this methodology may be used. The laboratory conducting and certifying the tests shall comply with the requirements of a relevant national or international standard such as ISO/IEC 17025. If the testing results are not available ex ante, they shall be made available at project verification;</p>	<p>(e) All products have been tested to international standards.</p>
<p>(f) Project lamps shall be marked for clear, unique identification to associate them with each unique CDM project. The method to meet this requirement includes, but is not limited to, the following:</p> <p>(i) Permanent marking of CDM project number and name on each of the project lamps along with other specifications;</p> <p>(ii) Marking using special codes, for example each project is permanently marked <i>'for CDM project, not for sale/resale'</i> followed by project specific marking/labelling;</p> <p>(iii) Other forms of identification using communication technologies (e.g. GPS, mobile phone networks) or lease/rental payment.</p>	<p>(f) Each system is marked with the CME's name and/or logo. IDs are recorded in the project database. No products manufactured by the CME are sold under any other emission reduction programme.</p>

B.3. Sources and GHGs

Source		Gas	Included	Justification/Explanation
Baseline	GHG emissions from combustion of kerosene	CO ₂	Yes	Major source of emissions
		CH ₄	No	Minor source of emissions. Exclusion is conservative
		N ₂ O	No	Minor source of emissions. Exclusion is conservative
		---		Not applicable
Project activity	None	CO ₂	No	No emissions from solar products
		CH ₄	No	Not applicable
		N ₂ O	No	Not applicable
		---		Not applicable

In addition, the following flow diagram physically delineates the CPA boundary, including equipment, systems, and emissions.



B.4. Description of baseline scenario

>>

In accordance with the applied methodology, AMS-III.AR, the baseline scenario is the following: The methodology provides for a default baseline emission factor for the project lamps where it is assumed that in the absence of the project activity, the baseline scenario would be the use of fossil fuel (kerosene) burning for lighting.

The annual lamp emission factor is fixed in the applied methodology (para 20) as 0.092 tCO₂e per project lamp per year.

B.5. Demonstration of eligibility for a generic CPA

>>

This proposed CPA is eligible as it fulfils the eligibility criteria for inclusion of a CPA under the PoA provided in section B.2 of the PoA document.

No.	Criteria	Satisfied	Condition
(a)	The geographical boundary of the CPA	[Yes]	The geographical boundary of this

	including any time-induced boundary consistent with the geographical boundary set in the PoA		CPA is [COUNTRY].
(b)	Conditions that avoid double counting of emission reductions like unique identifications of product and end-user locations (e.g. programme logo)	Yes	Each solar lighting system is marketed with the CME's name and/or logo. IDs are recorded in the project database.
(c)	The specifications of technology/measure including the level and type of service, performance specifications including compliance with testing/certifications	Yes	The CPAs distribute solar lighting systems, each of which complies with the technology eligibility criteria in the methodology.
(d)	Conditions to check the start date of the CPA through documentary evidence	[Yes]	The start date of the CPAs is on or after the start date of the PoA. The project database records the sales date of each system.
(e)	Conditions that ensure compliance with applicability and other requirements of single or multiple methodologies applied by CPAs	Yes	The applicability with the methodology is specified in Part II. B.2.
(f)	The conditions that ensure that the CPA meets the requirements pertaining to the demonstration of additionality	Yes	The CPAs are automatically additional as described in Section B.1. of the PoA-DD, above.
(g)	The PoA-specific requirements stipulated by the CME including any conditions related to undertaking local stakeholder consultations and environmental impact analysis	Yes	The stakeholder consultation is conducted at the PoA level. No environmental impact assessment is required.
(h)	Conditions to provide an affirmation that funding from Annex I Parties, if any, does not result in a diversion of official development assistance	[Yes]	A confirmation will be included in each CPA-DD.
(i)	Where applicable, target group (e.g. domestic/commercial/industrial, rural/urban, grid-connected/off-grid) and distribution mechanisms (e.g. direct installation)	[Yes]	Each CPA will use one or more of the following methods for distribution: 1. Direct sale to end-users; 2. Distribution to the end-user by an organization receiving the products/measures from the CME.
(j)	Where applicable, the conditions related to sampling requirements for the PoA in accordance with the "Standard for sampling and surveys for CDM project activities and programme of activities"	Yes	It is anticipated that all systems are monitored. However, if sampling is applied parameter values shall be estimated by sampling in accordance with the requirements in the applied methodology separately and independently for each of the CPAs included in a PoA except when a single sampling plan covering a group of CPAs is undertaken applying 95/10 confidence/precision for the sample size calculation.
(k)	Where applicable, the conditions that ensure	[Yes]	Each CPA includes the calculated

	that every CPA meets the small-scale or microscale threshold and remains within those thresholds throughout the crediting period of the CPA. However, for a CPA that consists of only units that qualify as 'microscale CDM units' as defined in the methodological tool "Demonstration of additionality of microscale project activities", this condition is not required		maximum number of systems, and therefore remains within the small-scale threshold.
(I)	Where applicable, the requirements for the debundling check, in case the CPA belongs to small-scale or microscale project categories. However, if a CPA solely consists of 'microscale CDM units', the requirement regarding debundling is not applicable	Yes	Each of the independent systems included in the CPAs is no larger than 1% of the small-scale thresholds defined by the methodology applied, ¹⁸ therefore they are considered as not being a de-bundled component of a large scale activity. ¹⁹

B.6. Estimation of emission reductions of a generic CPA

B.6.1. Explanation of methodological choices

>>

The baseline emissions per project lamp are calculated using equation (3) of AMS-III.AR, as follows:

$$BE_{per_lamp,y} = DV \times GF_y \times DBy$$

Where:

$BE_{per_lamp,y}$ = Baseline emissions per project lamp in period y (tCO₂e/year)

DV = Lamp Emission Factor (default is 0.092 tCO₂e per project lamp)²⁰

GF_y = Grid Factor in year y,

- Equal to 1.0 when charging option defined in paragraph 3(a) of the methodology is used;²¹
- Equal to 1.0 if the project activity is for off-grid households/communities (defined as no grid access or less than 12 hours grid availability per day on an annual average basis);
- Otherwise it is equal to 1.0 minus (the fraction of time grid is available to the target households and communities/users in the region of project activity).

DBy = Dynamic Baseline Factor (change in baseline fuel, fuel use rate, and/or utilization during crediting period) in year y. Calculated as either:

- Option 1: default of 1.0 in the absence of relevant information;

¹⁸ 15 kW installed capacity or 0.6 GWh annual energy savings or 0.6 ktCO₂e annual emission reductions.

¹⁹ Methodological tool "Assessment of debundling for small-scale project activities", Version 04.0 (EB83, Annex 13).

²⁰ Alternative values for parameters in equation (2) of AMS-III.AR to result in a different value for DV (e.g. fuel use rate, utilization rate) can only be used if adequate research/monitoring and documentation is provided by the project proponent (e.g. strategic surveys and research conducted by national or local organizations, initiatives by international organizations or non-governmental organizations or the project proponent to collect reliable and comprehensive data).

²¹ Based on the demonstration that fossil fuel is the predominant practice for lighting as per paragraph 8(a) of the methodology, it is assumed all baseline emissions are from the consumption of fossil fuel burning for lighting.

- Option 2: value of $1.0 + \text{FFg}$ where FFg is the documented national growth rate of kerosene fuel use in lighting from the preceding years (use the most recent available data for a three or five years average (fraction))

Regarding the options available for these parameters, the project proponents have made the following choices:

DV: apply default value of 0.092 tCO₂e.

GFy: equal to 1.0, as the charging option is 3(a), solar, and it is shown that fuel-based lighting is common practice in the region.

DBy: apply option 1: default of 1.0, as the project proponents do not have relevant documented information.

All project lamps are solar lights, thus there is only a single charging method, and project emissions are 0 for solar-charged lights. Therefore, the baseline emissions of the solar lights are calculated using equation (5) of AMS-III.AR, as follows:

$$BE_{solar_lights,y} = \sum_{i,j} (N_{i,j} \times BE_{per_lamp,y} \times OF_{y,i,j})$$

Where:

$N_{i,j}$ = Number of project lamps distributed to end users of type i with charging method j.

$OF_{y,i,j}$ = 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 per cent for years 1, 2 and 3, and equal to the value determined in paragraph 30 of the methodology, for years 4, 5, 6 and 7²². (Please note that for the calculation of the expected emission reductions, this value is assumed to remain 100 per cent for the latter years too for simplicity.)

In addition, AMS-III.AR specifies that the emission reductions shall be considered from the date of distribution of the project lamps to end-users, using the parameter Lampyear.

Lamp effective useful life²³

As well as monitoring the percentage of lamps that are operating, the project proponents also need to choose one of two options for the effective useful life of the project lamps. The project Proponents choose Option 2.

Option 1 (Not chosen.)

Project lamps are assumed to operate for two years after distribution to end-users. Therefore, under this option, emission reductions may only be claimed for two years.

Option 2 (Chosen)

Project lamps are assumed to operate for up to seven years after distribution to end-users, and thus emission reductions can be claimed for up to seven years per project lamp, if all of the following conditions are met:

(a) Unless specified otherwise in this document, the currently-applicable requirements to meet the Lighting Global Minimum Quality Standards at the time of project application shall be met by

²² The years refer to the operational years of project lamps (e.g. for project lamps distributed in year 3 of the crediting period years 1, 2 and 3 relate to the years 3, 4 and 5 of the crediting period and so forth).

²³ The crediting period of the project activity is distinct from the lamp effective useful life and the standard fixed or renewable period for CDM projects should be used. Project lamps may be distributed during multiple years as long as the elapsed life of lamps can be unambiguously tracked to ensure that emission reductions are not credited beyond two years (for Option 1) or seven years (for Option 2) for any given project lamp. In addition, both Options 1 and 2 may be used in a single project activity, but the option selected for each lamp must be specified before the distribution of the lamp.

project lamps based on IEC/TS 62257-9-5 and IEC 60529, or an equivalent national standard, or the approved norms indicated in paragraph 15(h);

(b) At a minimum, project lamps must be certified by their manufacturer to have a useful operational life of 10,000 hours. Within this time span, the relative luminous flux shall not decrease by more than 30 per cent as per equation (1). Such claims shall be confirmed by a third-party testing organization using an applicable standard and testing protocol. 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.

$$\phi_{vrel} = \phi_c(t) / \phi_v(t_0)$$

Where:

ϕ_{vrel} = Relative luminous flux after time t (shall be => 85% after 2,000 hrs and => 70% after 10,000 hrs)

$\phi_v(t)$ = Luminous flux after time t

$\phi_v(t_0)$ = Initial luminous flux

(c) The project lamps use a replaceable, rechargeable battery. In addition, there must be documented measures in place to ensure that lamp owners have access to replacement batteries of comparable quality;

(d) With regard to physical ingress and water protection, mechanical durability, and the quality of workmanship the project lamps shall achieve a minimum level of protection, based on the type of lamp, in accordance with Lighting Global Minimum Quality Standards, IEC/TS 62257-9-5 and IEC 60529, or an equivalent national standard, or the approved norms indicated in paragraph 15;

(e) Compliance with the technical requirements in paragraph 18 are confirmed by a third-party testing organization based on appropriately sampled (random or market-selected) tests 5 of project lamps using applicable national standards where such are available, or alternatively, the standards or test protocols indicated in paragraph 15 of this methodology may be used. The laboratory conducting and certifying the tests shall comply with the requirements of a relevant national or international standard such as ISO/IEC 17025. If the testing results are not available ex ante, they shall be made available at project verification;

(f) Project lamps shall be marked for clear, unique identification to associate them with each unique CDM project. The method to meet this requirement includes, but is not limited to, the following:

(i) Permanent marking of CDM project number and name on each of the project lamps along with other specifications;

(ii) Marking using special codes, for example each project is permanently marked 'for CDM project, not for sale/resale' followed by project specific marking/labelling;

(iii) Other forms of identification using communication technologies (e.g. GPS, mobile phone networks) or lease/rental payment.

The technical specifications in Appendix 3 show that the lamps distributed under this project comply with all these conditions for the application of Option 2.

B.6.2. Data and parameters fixed ex-ante

>>

Data / Parameter:	DV
Data unit:	tCO ₂ e per project lamp (per year)
Description:	Lamp Emission Factor
Source of data:	AMS-III.AR
Value(s) applied:	0.092
Choice of data or Measurement methods and procedures:	Methodology default
Purpose of data	Calculation of baseline emissions
Additional comment:	

Data / Parameter:	GF_y
Data unit:	-
Description:	Grid Factor in period y
Source of data:	AMS-III.AR
Value(s) applied:	1.0
Choice of data or Measurement methods and procedures:	The charging option is defined in paragraph 3(a) of the methodology: renewable energy; And fuel-based lighting systems are common practice in the project region.
Purpose of data	Calculation of baseline emissions
Additional comment:	

Data / Parameter:	D_{By}
Data unit:	-
Description:	Dynamic Baseline Factor (change in baseline fuel, fuel use rate, and/or utilization during crediting period) in period y
Source of data:	AMS-III.AR
Value(s) applied:	1.0
Choice of data or Measurement methods and procedures:	Option 1: default
Purpose of data	Calculation of baseline emissions
Additional comment:	

B.6.3. Ex-ante calculations of emission reductions

>>

Sample calculation:

For the purpose of the sample calculation it is assumed that the maximum number of solar lighting systems, with 3 lamps each, [217,391] systems, are distributed under this this proposed CPA; and that they are operating for the full year. Using the default baseline emissions in accordance with the methodology, the emission reductions are calculated as follows:

$$BE_y = 0.092 \text{ tCO}_2\text{e/lamp} * 1.0 * 1.0 = 0.092 \text{ tCO}_2\text{e/lamp}$$

$$PE_y = 0$$

$$ER_y = (217,391 \text{ system} * 3 \text{ lamps/system}) * 0.092 \text{ tCO}_2\text{e/lamp} * 1 = 59,999.916 \text{ tCO}_2\text{e}$$

B.7. Application of the monitoring methodology and description of the monitoring plan

B.7.1. Data and parameters to be monitored by each generic CPA

>>

Data / Parameter:	N_{i,j}
Data unit:	-
Description:	Number of project lamps distributed to end users of type i with charging method j
Source of data:	Sales records
Value(s) applied	652,173 (217,391 systems with 3 lamps for each system)

Measurement methods and procedures:	All sales records will be recorded in a project database, which includes all relevant information to be able to identify the product such as serial number, sales date, customer name and phone number, etc.
Monitoring frequency:	Continuous
QA/QC procedures:	Sales records can be cross-checked against product serial numbers supplied by the manufacturer and/or receipts / warrantee cards.
Purpose of data	Calculation of baseline emissions
Additional comment:	AMS-III.AR specifies that the emission reductions shall be considered from the date of distribution of the project lamps to end-users, using the parameter Lampyear

Data / Parameter:	Lampyear,y
Data unit:	Fraction
Description:	Calculated average lamp operation years in the monitoring period
Source of data:	Project database (sales records)
Value(s) applied	See spreadsheet
Measurement methods and procedures:	Using the sales date, the number of operating days in the monitoring period is automatically calculated in the project database. If lamps have been operating for 365 days then Lampyear = 1.0. If less than 365 days, then Lampyear is reduced (eg. 180 days = 0.5).
Monitoring frequency:	Continuous
QA/QC procedures:	Sales records can be cross-checked against product serial numbers supplied by the manufacturer and/or receipts / warrantee cards signed by the lamp users.
Purpose of data	Calculation of baseline emissions
Additional comment:	The first operating day, is the day after the sales date.

Data / Parameter:	OF_{y,i,j}
Data unit:	Fraction
Description:	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.
Source of data:	Year 1-3 ²⁴ : default, assumed to be 100%. Year 4-7: sampling
Value(s) applied	Year 1-3: 100% (methodology default) Year 4-7: 100% (assumption for the emission reduction calculations in this document)
Measurement methods and procedures:	An ex-post monitoring survey to determine the 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. Only systems with a unique project marking can be counted as operating and in service. While project lamps replaced as part of a regular maintenance or warranty program can be counted as operating, project lamps cannot be replaced as part of the survey process and then counted as operating. The result of the sampling survey of the first batch is used as a proxy to subsequent batches.
Monitoring frequency:	Once in year 3

²⁴ The years refer to the operational years of project lamps (e.g. for project lamps distributed in year 3 of the crediting period years 1, 2 and 3 relate to the years 3, 4 and 5 of the crediting period and so forth).

QA/QC procedures:	The following survey principles shall be followed for activities related to determining number of project lamps in service and operating under the project: <ul style="list-style-type: none"> • The sampling size is determined by minimum 90 per cent confidence interval and the 10 per cent maximum error margin; the size of the sample shall be no less than 100; • Sampling must be statistically robust and relevant, i.e. the survey has a random distribution and is representative of the target population (size, location); • The method to select respondents for interviews is random; • The survey is conducted by site visits; • Only persons over age 12 are interviewed; • The PD must contain the design details of the survey.
Purpose of data	Calculation of baseline emissions
Additional comment:	It is anticipated that each system is included in the sample

B.7.2. Description of the monitoring plan for a generic CPA

>>

In accordance with the methodologies used, the CME has chosen defaults or fixed parameters, where possible, reducing the burden of monitoring the emission reductions achieved from these small size distributed clean energy products during the operational phase of the project.

The monitoring activities will involve data collection at the point of distribution, as well as usage information post distribution. The data collected during distribution will involve information about the product, the purchaser and location to enable one to uniquely identify each unit and avoid double counting. This will form what is called the sales record. The CPA Implementer will distribute the products, as well as carry out the monitoring activities that occur during the distribution phase.

The following information is recorded by the activation team direct into the CME database at the time of distribution:

- Name/Identification of end user;
- The phone number of the end-user;
- Geographical location (town or service centre closest to the sales event). The CME's IT system tracks the location of the device by the nearest cell tower;
- Product detail;
- Serial ID number of the product;
- Date of activation ("commissioning").

As required in paragraph 30 of the methodology, the operational fraction of lamps is sampled in year 3.

In accordance with paragraph 31 of the methodology, the following survey principles shall be followed for activities related to determining number of project lamps in service and operating under the project:

- The sampling size is determined by minimum 90 per cent confidence interval and the 10 per cent maximum error margin; the size of the sample shall be no less than 100;
- Sampling must be statistically robust and relevant, i.e. the survey has a random distribution and is representative of the target population (size, location);
- The method to select respondents for interviews is random;
- The survey is conducted by site visits;
- Only persons over age 12 are interviewed;

As all systems are connected through a SIM to the CME, it is envisaged that all products distributed will be part of the year 3 sample. The data obtained from the ex-post monitoring

activities will be kept in a secure database and archived until at least 2 years after end of crediting period or the last issuance, whichever is the later.

Appendix 1. Contact information of coordinating/managing entity and responsible person(s)/ entity(ies)

CME and/or responsible person/ entity	<input checked="" type="checkbox"/> CME <input type="checkbox"/> Responsible person/ entity for application of the selected methodology(ies) and, where applicable, the selected standardized baseline(s) to the PoA
Organization	MKOPA Solar Kenya Ltd
Street/P.O. Box	Chania Avenue, Off ring-road / P.O. Box 51866-00100
Building	
City	Kilimani
State/Region	Nairobi
Postcode	
Country	Kenya
Telephone	+254 (0) 707 333 222
Fax	
E-mail	info@m-kopa.com
Website	www.m-kopa.com
Contact person	Kevin Reeder
Title	Head of Business Analytics
Salutation	Mr
Last name	Reeder
Middle name	
First name	Kevin
Department	
Mobile	
Direct fax	
Direct tel.	+49 1743 884 347
Personal e-mail	kevin.reeder@m-kopa.com

CME and/or responsible person/ entity	<input type="checkbox"/> CME <input checked="" type="checkbox"/> Responsible person/ entity for application of the selected methodology(ies) and, where applicable, the selected standardized baseline(s) to the PoA
Organization	Natural Capital Partners Europe Limited
Street/P.O. Box	167 Fleet Street
Building	
City	London
State/Region	
Postcode	EC4A 2EA
Country	UK
Telephone	+44 (0)20 7833 6038
Fax	
E-mail	cvrolijk@naturalcapitalpartners.com
Website	www.naturalcapitalpartners.com
Contact person	Christiaan Vrolijk
Title	

CME and/or responsible person/ entity	<input type="checkbox"/> CME <input checked="" type="checkbox"/> Responsible person/ entity for application of the selected methodology(ies) and, where applicable, the selected standardized baseline(s) to the PoA
Salutation	Mr
Last name	Vrolijk
Middle name	
First name	Christiaan
Department	Sourcing
Mobile	+44 (0)7919 385 107
Direct fax	
Direct tel.	+44 (0)20 7833 6038
Personal e-mail	cvrolijk@naturalcapitalpartners.com

Appendix 2. Affirmation regarding public funding

Not applicable

Appendix 3. Applicability of methodology(ies) and standardized baseline(s)

The applicability of the selected methodology has been provided in the main document. The technical specifications of the project equipment as per paragraph 9 of the methodology, are currently as follows:

Parameter	(Minimum) technical specifications
(a) Lamp wattage (in Watts) and luminous flux output (in lumens);	1.3 Watt 2,000 lumen (highest setting)
(b) Rated lamp life (in hours);	> 36,000 hours
(c) Where applicable, the type and rated capacity of the renewable energy equipment used for battery-charging (in Watts);	8 Wp
(d) Type (e.g. NiMH, Lead-Acid, Li-ion, Lithium-iron-phosphate, etc.), nominal voltage, and rated capacity of the batteries (in Ampere hours);	Type: Lithium-iron-phosphate (LiFePO4) Capacity: 3.3 Ah
(e) Type of charge controller (e.g. active or passive);	Active
(f) Autonomous time and DBT;	Autonomous time: 54 hours; DBT: 24 hours
(g) Solar Run Times(s) (SRT) for products with solar energy charging systems. If regional solar data are available, the maximum, minimum and average estimated SRT values for each month of a typical year shall be provided. If regional solar data are not available the standard solar day (5 kWh/m ²) shall be used to estimate SRT;	18 hours at 1,800 lumen, 24 hours at 300 lumen
(h) Where applicable, the amount of time to fully	Not applicable

charge the product using mechanical means or a centralized charging system (e.g. the national grid);	
(i) Physical protection against environmental factors (e.g. rain, heat, insect ingress).	IP44

Appendix 4. Further background information on ex ante calculation of emission reductions

A sample calculation is included in section B.6.3.

Appendix 5. Further background information on the monitoring plan

The monitoring plan is included in section B.7.2.

Appendix 6. Summary of post registration changes

There have been no post-registration changes.

Attachment. Instructions for filling out the programme design document form for CDM programmes of activities

1. General instructions

1. When designing a programme of activities (PoA) and completing the CDM-PoA-DD-FORM, in addition to applying the "[CDM project standard](#)" (Project standard), the "[Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities](#)" (PoA standard), the selected approved baseline and monitoring [methodology\(ies\)](#) (hereinafter referred to as the selected methodology(ies)) and, where applicable, the selected approved [standardized baseline\(s\)](#) (hereinafter referred to as the selected standardized baseline(s)), consult the "[Rules and Reference](#)" section of the UNFCCC CDM website. This section contains all regulatory documents for the CDM, such as [standards](#) (including [methodologies](#), [tools](#) and [standardized baselines](#)), [procedures](#), [guidelines](#), [clarifications](#), [forms](#) and the "[Glossary: CDM terms](#)".
2. When documenting changes occurred to the PoA after its registration in accordance with applicable provisions relating to the post registration changes process, prepare two versions of the PoA-DDs using the CDM-PoA-DD-FORM, one in clean version and the other indicating the changes in track-change.
3. In addition to the provisions in paragraph 2 above, provide a summary of the changes, including the reasons for the changes and any additional information relating to the changes, in Appendix 6 below.
4. Where a PoA-DD contains information that the coordinating/ managing entities (CME) wish to be treated as confidential/proprietary, submit the documentation in two versions:
 - (a) One version where all parts containing confidential/proprietary information are made illegible (e.g. by covering those parts with black ink) so that the version can be made publicly available without displaying confidential/proprietary information;
 - (b) A version containing all information that is to be treated as strictly confidential/proprietary by all parties handling this documentation (designated operational entities (DOEs) and applicant entities (AEs); Board members and alternate members; panel/committee and working group members; external experts requested to consider such documents in support of work for the Board; the secretariat).
5. Information used to: (a) demonstrate additionality; (b) describe the application of selected baseline and monitoring methodology(ies) and, where applicable, the selected standardized baseline(s); and (c) support the environmental impact assessment, is not considered proprietary or confidential. Make any data, values and formulae included in electronic spreadsheets provided accessible and verifiable.
6. Complete the CDM-PoA-DD-FORM and all attached documents in English, or contain a full translation of relevant sections in English.
7. Complete the CDM-PoA-DD-FORM using the same format without modifying its font, headings or logo, and without any other alteration to the form.
8. Do not modify or delete tables and their columns in the CDM-PoA-DD-FORM. Add rows of the tables as needed. Add additional appendices as needed.
9. If a section of the CDM-PoA-DD-FORM is not applicable, explicitly state that the section is left blank intentionally.

10. Use an internationally recognized format for presentation of values in the CDM-PoA-DD-FORM, for example use digits grouping in thousands and mark a decimal point with a dot (.), not with a comma (,).
11. Complete the CDM-PoA-DD-FORM deleting this Attachment “Instructions for filling out the programme design document form for CDM programme of activities”.

2. Specific instructions

1. Indicate the following information on the cover page:
 - (a) Title of the PoA;
 - (b) Version number of the PoA-DD;
 - (c) Completion date of the PoA-DD (DD/MM/YYYY);
 - (d) Coordinating/ managing entity;
 - (e) Host Party(ies);
 - (f) Applied methodology(ies) and, where applicable, applied standardized baseline(s);
 - (g) Sectoral scope(s) linked to the applied methodology(ies), clearly indicating mandatory sectoral scopes and if applicable, conditional sectoral scopes for the project activity.

PART I. Programme of activities (PoA)

SECTION A. General description of PoA

A.1. Title of the PoA

1. Indicate:
 - (a) The title of the proposed PoA;
 - (b) The current version number of the PoA-DD;
 - (c) The date the PoA-DD was completed (DD/MM/YYYY).

A.2. Purpose and general description of the PoA

1. Include a description of the:
 - (a) Policy/measure or stated goal that the PoA seeks to promote;
 - (b) Framework for the implementation of the proposed PoA.
2. Include a confirmation that the PoA is a voluntary action by the CME.
3. Include a brief description of how the proposed PoA contributes to sustainable development (not more than one page).

A.3. CME and participants of PoA

1. Include:
 - (a) Identity of the CME of the proposed PoA, as the entity which communicates with the Board;
 - (b) Project participants to the PoA (project participants may or may not be involved in one of the component project activities (CPAs) related to the PoA).

A.4. Party(ies)

1. List in the table below Party(ies), project participants and CME involved in the proposed PoA and provide contact information in Appendix 1 below.

Name of Party involved ("host" indicates a host party)	Private and/or public entity(ies) project participants, CME (as applicable)	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
Name A (host)	Private entity A Public entity A	

Name of Party involved ("host" indicates a host party)	Private and/or public entity(ies) project participants, CME (as applicable)	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
Name B	Private entity B Public entity B	
...	...	

A.5. Physical/geographical boundary of the PoA

1. Provide details of the defined boundary of the proposed PoA in terms of a geographical area (e.g. municipality, region within a country, country or several countries) within which all CPAs to be included in the PoA will be implemented.

A.6. Technologies/measures

1. Describe the technologies and/or measures to be employed and/or implemented by the CPAs in the PoA.
2. Do not provide information that is not essential to understanding the purpose of the PoA and how it reduces GHG emissions. Do not include information related to equipment, systems and measures that are auxiliary to the main scope of the CPAs in the PoA and do not affect directly or indirectly GHG emissions and/or mass and energy balances of the processes related to the CPAs in the PoA.
3. Include a description of how the technologies, and measures and know-how to be used are transferred to the host Party(ies).
4. Provide information of:
 - (a) The facilities, systems and equipment in operation under the existing scenario prior to the implementation of the CPAs in the PoA and in the baseline scenario. Clearly explain how the same types and levels of services provided by the project activity would have been provided in the baseline scenario;
 - (b) The types and levels of services provided by the systems and equipment that are being modified and/or installed under the CPAs in the PoA and their relation, if any, to other manufacturing/production equipment and systems outside the project boundary. Include in the description information on the age and average lifetime of the equipment based on the manufacturer's specifications and industry standards, and existing and forecast installed capacities, load factors and efficiencies. Provide energy and mass flows and balances of the systems and equipment included in the project activity if necessary.

A.7 Public funding of PoA

1. Indicate whether the PoA receives public funding from Parties included in Annex I.
2. If so:
 - (a) Provide information on Parties providing public funding;
 - (b) Attach in 0 : the affirmation obtained from such Parties in accordance with applicable provisions related to official development assistance in the Project standard.

SECTION B. Demonstration of additionality and development of eligibility criteria

B.1. Demonstration of additionality for PoA

1. Describe how in the absence of CDM, none of the implemented CPAs would occur.

B.2. Eligibility criteria for inclusion of a CPA in the PoA

1. Describe the eligibility criteria in accordance with the applicable provisions in the "Standard: Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities".

B.3. Application of technologies/measures and methodologies

1. Describe the technology/measures and indicate the methodology chosen. In cases where multiple technologies/measures or multiple methodologies are being applied, list all the combinations of technologies/measures and methodologies that will be used in the PoA.
2. If applicable, provide a description of the sampling plan and demonstrate how it meets applicable provisions in the “Standard for sampling and surveys for CDM project activities and programme of activities”.

B.4. Date of completion of application of methodology and standardized baseline and contact information of responsible person(s)/ entity(ies)

1. Provide the date of completion of study on application of the selected methodology(ies) and, where applicable, the selected standardized baseline(s) to the PoA in the format of DD/MM/YYYY.
2. Provide contact information of the person(s)/ entity(ies) responsible for the application of the selected methodology(ies) and, where applicable, the selected standardized baseline(s) to the PoA and indicate if the person(s)/ entity(ies) is also a CME(s) in Appendix 1 below.

SECTION C. Management system

1. Describe the management system in accordance with applicable provisions in the PoA standard.

SECTION D. Duration of the PoA

D.1. Start date of the PoA

1. Describe how the start date was determined, by choosing either the date of notification of the intention to seek the CDM status by the coordinating/managing entity to the DNA(s) of the host Party(ies) and the secretariat; or the date of publication of the PoA-DD for global stakeholder consultation.
2. If the coordinating/managing entity chooses the date of publication of the PoA-DD for global stakeholder consultation as the start date of the PoA, indicate the start date of the PoA as the date of publication of the PoA-DD at the stage of global stakeholder consultation, and indicate the exact date of publication before submitting the request for registration of the PoA.

D.2. Duration of the PoA

1. State the duration of the proposed PoA in years.

SECTION E. Environmental impacts

E.1. Level at which environmental analysis is undertaken

1. Indicate whether the environmental analysis is performed at the PoA and/or the CPA level, and justify the choice of level at which the environmental analysis is undertaken.

E.2. Analysis of the environmental impacts

1. Provide a summary of the analysis of the environmental impacts, including transboundary impacts and references to all related documentation.

E.3. Environmental impact assessment

1. If an environmental impact assessment is required provide conclusions and references to all related documentation.
2. If the proposed CDM PoA includes only small-scale non-A/R CPAs, provide a summary of the analysis of the environmental impacts of the proposed CDM PoA and references to all documentation, if required by the host Party(ies).

SECTION F. Local stakeholder consultation

F.1. Solicitation of comments from local stakeholders

1. Indicate whether the local stakeholder consultation process is performed at the PoA and/or the CPA level, and justify the choice of level at which the local stakeholder consultation is undertaken.
2. Describe the process by which comments from local stakeholders were invited and compiled in accordance with the applicable provisions in the Project standard.
3. Describe how stakeholder consultation was conducted in accordance with applicable national regulations, if any.

F.2. Summary of comments received

1. Identify stakeholders that have made comments, including comments forwarded by the DNA of the host Party(ies), if any, and provide a summary of these comments.

F.3. Report on consideration of comments received

1. Provide information demonstrating that all comments and complaints received, including comments and complaints forwarded by the DNA of the host Party, if any, have been considered.

SECTION G. Approval and authorization

1. Indicate whether the letter(s) of approval from Party(ies) which wishes to be involved in the PoA, is available at the time of submitting the PoA-DD to the validating DOE.
2. If so, provide along with the PoA-DD the letter(s) of approval of the:
 - (a) Party(ies) involved in the proposed PoA;
 - (b) CME letters of authorization of its coordination of the PoA from each Party.

PART II. Generic component project activity (CPA)

1. Use this section to demonstrate the application of the PoA framework to generic CPAs and to demonstrate that each type of CPA meets the requirements of the PoA.
2. In accordance with the Project standard, where more than one technology/measure or more than one methodology is applied in the PoA, prepare a generic CPA for each technology/measure, each methodology and each combination thereof. Therefore, repeat all of Part II of this Attachment for each generic CPA-DD such that one completed Part II represents one generic CPA-DD, and collate all the generic CPA-DDs, not mixing the sections thereof (cross-referencing to avoid repetition of information is permissible).
3. If the CPA includes technologies/measures that are included in the positive lists for additionality demonstration under the “Guidelines on demonstration of additionality of small-scale project activities” or “Guidelines on demonstration of additionality of microscale project activities” then the generic CPA-DD may cover more than one technology/measure. However, in this case, indicate all information related to eligibility criteria, emission reduction calculations and monitoring requirements separately for each technology/measure taking into account any specific guidance in the applied methodologies.

SECTION A. General description of a generic CPA

A.1. Purpose and general description of generic CPAs

1. Provide a description of each generic CPA within the PoA.

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

B.1. Reference of methodology(ies) and standardized baseline(s)

1. Indicate exact reference (number, title, version) of:
 - (a) The selected methodology (e.g. ACM0001: “Large-scale Consolidated Methodology: Flaring or use of landfill gas” (Version 15.0)) or multiple methodologies (see “Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities”);
 - (b) Any tools and other methodologies to which the selected methodology refers (e.g. “Methodological Tool: Tool for the demonstration and assessment of additionality” (Version 07.0.0));
 - (c) The selected standardized baseline(s), where applicable (e.g. ASB0001 “Standardized baseline: Grid emission factor for the Southern African power pool” (Version 01.0)).
2. Refer to the UNFCCC CDM website for the exact reference of approved baseline and monitoring methodologies, tools and standardized baselines.

B.2. Applicability of methodology(ies) and standardized baseline(s)

1. Justify the choice of the selected methodology(ies) and, where applicable, the selected standardized baseline(s) by showing that each generic CPA meets each applicability condition of the methodology(ies) and, where applicable, the selected standardized baseline(s). If applicable, provide a general description of the sampling plan.
2. Explain documentation that has been used as a basis of justification and provide references or include the documentation in Appendix 3 below.

B.3. Sources and GHGs

1. Describe the sources and GHGs included in each generic CPA boundary.
2. Use the table below to describe emission sources and GHGs included in the CPA boundary for the purpose of calculating project emissions and baseline emissions.
3. In addition to the table, where possible, present a flow diagram physically delineating each generic CPA, based on the description provided in section A.6 “Technologies/measures” of Part I above.
4. Include in the flow diagram all the equipment, systems and flows of mass and energy described in that section. In particular, indicate in the diagram the emissions sources and GHGs included in the project boundary and the data and parameters to be monitored.

Source		Gas	Included	Justification/Explanation
Baseline	Source 1	CO ₂		
		CH ₄		
		N ₂ O		

	Source 2	CO ₂		
		CH ₄		
		N ₂ O		

	---	---		

Project activity	Source 1	CO ₂		
		CH ₄		
		N ₂ O		

	Source 2	CO ₂		
		CH ₄		
		N ₂ O		

	---	---		

B.4. Description of baseline scenario

1. Describe how the baseline scenario is identified for each generic CPA.
2. Explain how the baseline scenario is established in accordance with applicable provisions for establishment and description of baseline scenarios in the Project standard and the selected methodology(ies).
3. Where the procedure in the selected methodology(ies) involves several steps, describe how each step is applied and transparently document the outcome of each step. Explain and justify key assumptions and rationales. Provide and explain all data used to establish the baseline scenario (variables, parameters, data sources, etc.). Provide all relevant documentation and/or references.
4. Where “future anthropogenic emissions by sources are projected to rise above current levels due to the specific circumstances of the host Party”, use the “Guidelines on the consideration of suppressed demand in CDM methodologies” to propose a revision to an approved methodology to cover such scenario if it is not covered in the methodology.
5. Provide a transparent description of the baseline scenario as established above.
6. Where the selected standardized baseline standardizes the baseline scenario, describe the baseline scenario in accordance with the selected standardized baseline.
7. The full description of the technology of the baseline scenario is to be provided in section A.6 of Part I above.

B.5. Demonstration of eligibility for a generic CPA

1. Demonstrate how each generic CPA meets the eligibility criteria of the PoA including confirmation of additionality of the generic CPA for its inclusion into the PoA.

B.6. Estimation of emission reductions of a generic CPA

B.6.1. Explanation of methodological choices

1. Explain how the methods or methodological steps, in the selected methodology(ies) and, where applicable, the selected standardized baseline(s), for calculating baseline emissions, project emissions, leakage emissions and emission reductions are applied to each generic CPA. Clearly state which equations will be used in calculating emission reductions.

B.6.2. Data and parameters fixed ex ante

1. Include a compilation of information on the data and parameters that are not monitored during the crediting period but are determined before the validation and remain fixed throughout the crediting period. Do not include data that become available only after the registration/inclusion of the CPAs in the PoA (e.g. measurements after the implementation of the CPAs in the PoA) here but include them in the table in section B7.1 below.
2. The compilation of information may include data that are measured or sampled, and data that are collected from other sources (e.g. official statistics, expert judgment, proprietary data, IPCC, commercial and scientific literature, etc.). Do not include data that are calculated with equations provided in the selected methodology(ies) or default values specified in the methodology(ies) in the compilation.
3. For each piece of data or parameter, complete the table below, following these instructions:
 - (a) "Value(s) applied": Provide the value applied. Where a time series of data is used, where several measurements are undertaken or where surveys have been conducted, provide detailed information in Appendix 4 above. To report multiple values referring to the same data or parameter, use one table. If necessary, use reference(s) to electronic spreadsheets;
 - (b) "Choice of data": Indicate and justify the choice of data source. Provide clear and valid references and, where applicable, additional documentation in Appendix 4 above;
 - (c) "Measurement methods and procedures": Where values are based on measurement, include a description of the measurement methods and procedures applied (e.g. which standards have been used), indicate the responsible person/entity that undertook the measurement, the date of the measurement and the measurement results. More detailed information can be provided in Appendix 4 above;
 - (d) "Purpose of data": Choose one of the following:
 - (i) Calculation of baseline emissions;
 - (ii) Calculation of project emissions;
 - (iii) Calculation of leakage.
4. For parameter global warming potentials (GWPs), from 1 January 2013, include the values adopted by decision [4/CMP.7](#) to calculate the emission reductions achieved in the second commitment period of the Kyoto Protocol in accordance with the applicable provisions in the Project standard.

(Copy this table for each data and parameter)

Data / Parameter:	
Data unit:	
Description:	
Source of data:	
Value(s) applied:	
Choice of data or Measurement methods and procedures:	
Purpose of data	
Additional comment:	

B.6.3. Ex ante calculations of emission reductions

1. Provide a transparent ex ante calculation of project emissions, baseline emissions(or, where applicable, direct calculation of emission reductions) and leakage emissions expected during the crediting period, applying all relevant equations provided in the selected methodology(ies) and, where applicable, the selected standardized baseline(s). For data or parameters available before validation, use values contained in the table in section B.6.2 above.

2. For data/parameters not available before validation and monitored during the crediting period, use estimates for parameters contained in the table in section B.7.1 below. If any of these estimates has been determined by a sampling approach, provide a description of the sampling efforts in accordance with the “Standard for sampling and surveys for CDM project activities and programme of activities”.
3. Document how each equation is applied, in a manner that enables the reader to reproduce the calculation. Where relevant, provide additional background information and/or data in Appendix 4, including relevant electronic spreadsheets.
4. Provide a sample calculation for each equation used, substituting the values used in the equations.

B.7. Application of the monitoring methodology and description of the monitoring plan

1. Through sections B.7.1 and B.7.2 below, provide a detailed description of the monitoring plan of the CPA developed in accordance with the applicable provisions in the Project standard, the selected methodology(ies) and, where applicable, the selected standardized baseline.
2. If the coordinating/managing entity chooses to delay the submission of the monitoring plan for the proposed CPA in accordance with the applicable provisions in the Project standard, clearly state that the submission of the monitoring plan is delayed and that the PoA-DD does not contain information related to the monitoring plan.

B.7.1. Data and parameters to be monitored by each generic CPA

1. Include specific information on how the data and parameters that need to be monitored in the selected methodology(ies) and, where applicable, the selected standardized baseline(s) would actually be collected during monitoring. Include here data that are determined only once for the crediting period but that will become available only after registration/inclusion of the CPAs in the PoA (e.g. measurements after the implementation of the CPAs in the PoA).
2. For each piece of data or parameter, complete the table below, following these instructions:
 - (a) “Source of data”: indicate the source(s) of data that will be used for the CPAs in the PoA (e.g. which exact national statistics). Where several sources are used, justify which data sources should be preferred;
 - (b) “Value(s) applied”: the value applied is an estimate of the data/parameter that will be monitored during the crediting period, but is used for the purpose of calculating estimated emission reductions. To report multiple values referring to the same data or parameter, use one table. If necessary, use reference(s) to electronic spreadsheets;
 - (c) “Measurement methods and procedures”: where data or parameters are to be monitored, specify the measurement methods and procedures, standards to be applied, accuracy of the measurements, person/entity responsible for the measurements, and, in case of periodic measurements, the measurement intervals;
 - (d) “QA/QC procedures”: describe the Quality Assurance (QA)/Quality Control (QC) procedures to be applied, including the calibration procedures, where applicable;
 - (e) “Purpose of data”: choose one of the following:
 - (i) Calculation of baseline emissions;
 - (ii) Calculation of project emissions;
 - (iii) Calculation of leakage.
3. Provide any relevant further background documentation in Appendix 5 below.

(Copy this table for each data and parameter)

Data / Parameter:	
Data unit:	
Description:	
Source of data:	
Value(s) applied	
Measurement methods and procedures:	
Monitoring frequency:	
QA/QC procedures:	
Purpose of data	

Additional comment:	
---------------------	--

B.7.2. Description of the monitoring plan for a generic CPA

1. Describe the monitoring plan for a generic CPA developed in accordance with the applicable provisions in the Project standard, the selected methodology(ies), and, where applicable, the selected standardized baseline(s).
2. If data and parameters monitored in section B.7.1 above are determined by a sampling approach, provide a description of the sampling plan in accordance with the recommended outline for a sampling plan in the “Standard for sampling and surveys for CDM project activities and programme of activities”.
3. Provide any relevant further background information in Appendix 5 below.

Appendix 1. Contact information of coordinating/managing entity and responsible person(s)/ entity(ies)

1. For each organisation listed in sections A.4 and B.4 above, complete the table below, with the following mandatory fields: CME and/or responsible person/ entity, Organization, Street/P.O. Box, City, Postcode, Country, Telephone, Fax and E-mail, and Name of contact person. Copy and paste the table as needed.

CME and/or responsible person/ entity	<input type="checkbox"/> CME <input type="checkbox"/> Responsible person/ entity for application of the selected methodology(ies) and, where applicable, the selected standardized baseline(s) to the PoA
Organization	
Street/P.O. Box	
Building	
City	
State/Region	
Postcode	
Country	
Telephone	
Fax	
E-mail	
Website	
Contact person	
Title	
Salutation	
Last name	
Middle name	

Appendix 2. Affirmation regarding public funding

1. If applicable, attach the affirmation obtained from Parties included in Annex I providing public funding to the PoA.

Appendix 3. Applicability of methodology(ies) and standardized baseline(s)

1. Provide any further background information on the applicability of the selected methodology(ies) and, where applicable, the selected standardized baseline(s).

Appendix 4. Further background information on ex ante calculation of emission reductions

1. Provide any further background information on the ex ante calculation of emission reductions. This may include data, measurement results, data sources, etc.

Appendix 5. Further background information on the monitoring plan

1. Provide any further background information used in the development of the monitoring plan. This may include tables with time series data, additional documentation of measurement equipment, procedures etc.

Appendix 6. Summary of post registration changes

1. Provide a summary of the post registration changes.

- - - - -

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
06.0	15 April 2016	Revision to ensure consistency with the "Standard: Applicability of sectoral scopes" (CDM-EB88-A04-STAN) (version 01.0).
05.0	9 March 2015	Revisions to: <ul style="list-style-type: none"> • Include provisions related to choice of start date of PoA; • Include provisions related to delayed submission of a monitoring plan; • Provisions related to local stakeholder consultation; • Add exception for generic CPA where technology is under positive lists; • Editorial improvement.
04.1	5 August 2014	Editorial revision to correct the document information table.
04.0	25 June 2014	Revisions to: <ul style="list-style-type: none"> • Include the Attachment: Instructions for filling out the project design document form for CDM programme of activities (these instructions supersede the <i>Guideline: Completing the programme design document form for CDM programme of activities</i> (Version 04.0)); • Include provisions related to standardized baselines; • Add contact information on a responsible person(s)/ entity(ies) for the application of the methodology (ies) to the PoA in B.4 and Appendix 1; • Add general instructions on post-registration changes in paragraph 2 and 3 of general instructions and Appendix 6; • Change the reference number from <i>F-CDM-PoA-DD</i> to <i>CDM-PoA-DD-FORM</i>; • Editorial improvement.
03.0	3 December 2012	EB 70 Revision to reflect changes to the <i>Guideline: Completing the programme design document form for CDM programmes of activities</i> (EB 70, Annex 6)
02.0	13 March 2012	EB 66 Revision required to ensure consistency with the "Guidelines for completing the programme design document form for CDM programmes of activities" (EB 66, annex 12).

<i>Version</i>	<i>Date</i>	<i>Description</i>
01.0	27 July 2007	EB 33, Annex 41 Initial adoption.

Decision Class: Regulatory
Document Type: Form
Business Function: Registration
Keywords: programme of activities, project design document
