

**SMALL-SCALE CDM PROGRAMME ACTIVITY DESIGN DOCUMENT FORM
(CDM-SSC-CPA-DD) - Version 01**



NAME /TITLE OF THE PoA: *CarbonSoft Open Source PoA: LED light distribution in East Africa*



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**CLEAN DEVELOPMENT MECHANISM
SMALL-SCALE PROGRAM ACTIVITY DESIGN DOCUMENT FORM (CDM-SSC-CPA-DD)
Version 01**

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- A. General description of CDM programme activity (CPA)
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Annex 2: Information regarding public funding

Annex 3: Baseline information

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NOTE:

- (i) This form is for submission of CPAs that apply a small scale approved methodology using the provision of the proposed small scale CDM PoA.
- (ii) The coordinating/managing entity shall prepare a CDM Small Scale Programme Activity Design Document (CDM-SSC-CPA-DD)^{1,2} that is specified to the proposed PoA by using the provisions stated in the SSC PoA DD. At the time of requesting registration the SSC PoA DD must be accompanied by a CDM-SSC CPA-DD form that has been specified for the proposed SSC PoA, as well as by one completed CDM-SSC CPA-DD (using a real case). After the first CPA, every CPA that is added over time to the SSC PoA must submit a completed CDM-SSC CPA-DD.

¹ The latest version of the template form CDM-CPA-DD is available on the UNFCCC CDM web site in the reference/document section.

² At the time of requesting validation/registration, the coordinating managing entity is required to submit a completed CDM-POA-DD, the PoA specific CDM-CPA-DD, as well as one of such CDM-CPA-DD completed (using a real case).

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SECTION A. General description of small scale CDM programme activity (CPA).

A.1. Title of the small-scale CPA:

Title: CarbonSoft East Africa CPA [01], [Light After Dark in Malawi]

CPA ID: EA001

Date: 01/09/2011

A.2. Description of the small-scale CPA:

The main aim of the CPA is replacement of kerosene used for lighting purposes in Malawi, with LED lamps. The LED lamps will lead to abatement of the GHG missions which would have occurred due to the combustion of kerosene, which is a fossil fuel. Also by replacing kerosene lamps with LED lamps, households are effectively saving money which would have been spent on the purchase of kerosene. There are many health benefits as well when replacing kerosene lamps with the Project LED lamps. The LED lamps used in the CPA are charged using Solar Energy.

A.3. Entity/individual responsible for the small-scale CPA:

Name of responsible entity: Solar Solutions Ltd, Malawi

A.4. Technical description of the small-scale CPA:

Name of Company: Solar Solutions Ltd, Malawi

Key product characteristics are:

- An all-in-one unit for ease of use and transport
- Minimal moving parts and small size to ensure ease of transportation and minimal technical problems whilst in use
- Charge time: 6-8 hours for a full charge
- Effective light: good for a minimum of 8 hours
- Total lumens per lamp: 21
- Power consumption of 0.3 watts
- Solar panels are effective for up to 20 years
- Type of charger: active
- Batteries: rechargeable AA nickel-metal hydride (“NiMH”) (1.2 volts)
- Each unit contains three rechargeable batteries that are each good for up to 500 charges. The unit is designed to ensure that the battery can be easily removed and replaced by customers at a very low cost
- The manufacturer, Illumination certifies each unit as having at least, 5,000 hours of useful life

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- Weather resistant design suitable for the local environment: the working temperature is -15 degrees Celsius to 50 degree Celsius. Insects can not ingress the unit
- Efficient dispersal of light across a wide area ensuring that the maximum area can be effectively illuminated, whilst limiting human eye exposure to direct LED light
- Illumination's solar lamp products are conservatively assumed to have an operation life of 3 years
- Each unit has a 1 year guarantee from the manufacturer which is passed on to customers.

Operation and maintenance instructions have been designed visually to ensure that they communicate clearly with all customers.

According to Paragraph 10, of Annex 13 of EB 54, “If each of the independent subsystems/measures (e.g., biogas digester, solar home system) included in the CPA of a PoA is no larger than 1% of the small-scale thresholds defined by the methodology applied, then that CPA of PoA is exempted from performing de-bundling check i.e., considering as not being a de-bundled component of a large scale activity”.

Since the independent subsystem in this case is the LED light and its capacity is much lesser than 1% of 15 KW as specified by the small scale methodology, this CPA of this PoA need not perform de-bundling check.

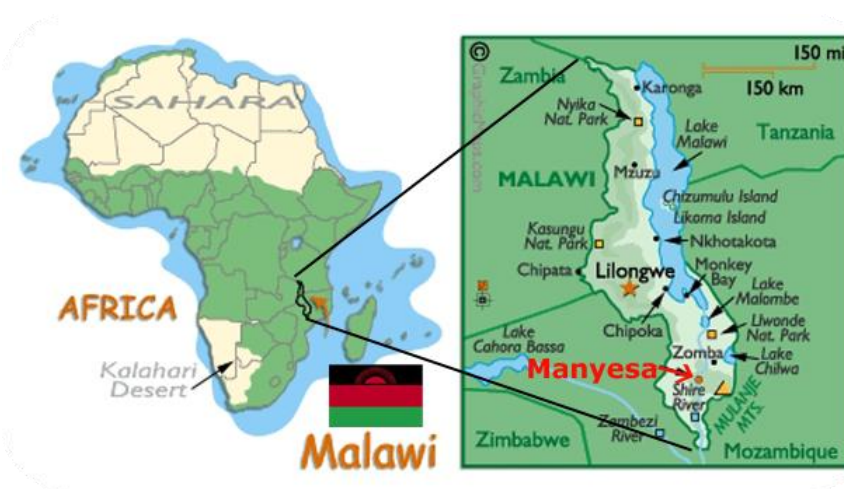
A.4.1. Identification of the small-scale CPA:

A.4.1.1. Host Party:

The Republic of Malawi (“Malawi”)

A.4.1.2. Geographic reference or other means of identification allowing the unique identification of the small-scale CPA (maximum one page):

The actual CPA boundaries have been marked in the map of the region below:



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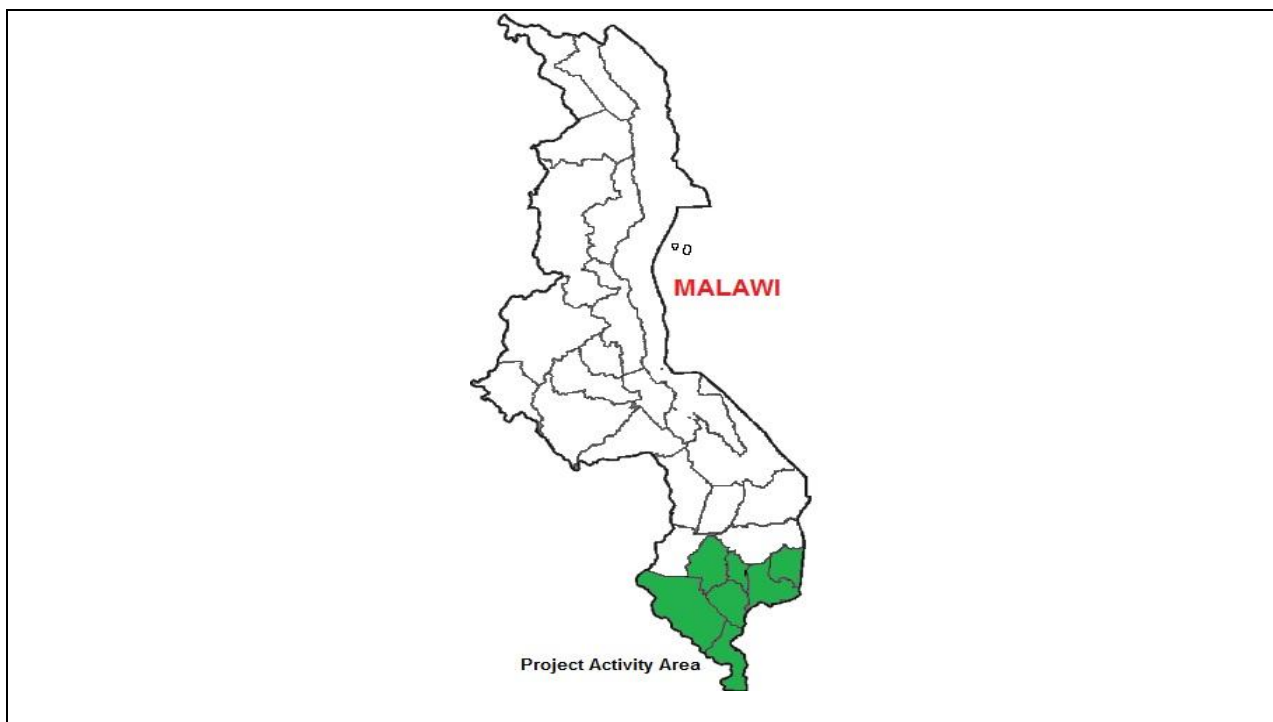


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The CPA will be held across the lower southern region which is colour coded green on the map. The CPA will comprise of the districts of Blantyre, Chikwawa, Chiradzulu, Mulanje, Nsanje, Phalombe and Thyolo.

A.4.2. Duration of the small-scale CPA:

A.4.2.1. Starting date of the small-scale CPA:

Starting date: <10/10/2011>

The intention of the project developer was lodged with the host country DNA prior to the commencement of the Project's start date. The local DNA was notified of the Project start date.

A.4.2.2. Expected operational lifetime of the small-scale CPA:

Due to the nature of the Project, the operational lifetime is challenging to determine; and will be affected by many external factors including economic development of the country, fossil fuel prices and the rollout of energy distribution infrastructure.

However, it is anticipated that the Project will continue operating for at least as long as the PoA, 28 years.

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A.4.3. Choice of the crediting period and related information:

Renewable crediting period

A.4.3.1. Starting date of the crediting period:

Starting Date of crediting period: 01/02/2012

A.4.3.2. Length of the crediting period, first crediting period if the choice is renewable CP:

Seven

A.4.4. Estimated amount of emission reductions over the chosen crediting period:

Year	Annual estimation of emission reductions in tonnes of tCO₂eq
2012	25707
2013	46841
2014	49183
2015	51642
2016	54224
2017	56935
2018	59782
<i>Total Emission reductions (TCO₂eq)</i>	344,314
<i>Total number of crediting years</i>	7
<i>Annual average emission reductions over the crediting period (tCO₂eq)</i>	49,187

A.4.5. Public funding of the CPA:

The Project does not receive public funding.

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A.4.6. Information to confirm that the proposed small-scale CPA is not a de-bundled component

According to Paragraph 10, of Annex 13 of EB 54, “*If each of the independent subsystems/measures (e.g., biogas digester, solar home system) included in the CPA of a PoA is no larger than 1% of the small-scale thresholds defined by the methodology applied, then that CPA of PoA is exempted from performing de-bundling check i.e., considering as not being a de-bundled component of a large scale activity*”.

Since the independent subsystem in this case is the LED light and its capacity is much lesser than 1% of 15 KW as specified by the small scale methodology, this CPA of the PoA need not perform the de-bundling check.

A.4.7. Confirmation that small-scale CPA is neither registered as an individual CDM project activity or is part of another Registered PoA:

The Project is not registered as an individual CDM project and it not part of another PoA, as there is no other PoA or CDM project in the region mentioned in the project boundary carrying out the same project activity of replacing kerosene lamps with LED lamps³.

For other CPAs of the “*CarbonSoft Open Source PoA: LED light distribution in East Africa*” PoA, double counting is prevented by assigning individual reference numbers to each individual Project Lamp.

SECTION B. Eligibility of small-scale CPA and Estimation of emissions reductions

B.1. Title and reference of the Registered PoA to which small-scale CPA is added:

CarbonSoft Open Source PoA: LED Lighting Distribution in East Africa

B.2. Justification of the why the small-scale CPA is eligible to be included in the Registered PoA :

AMS.III.AR requirement	SSC Qualification / Justification
<i>Replace portable fossil fuel based lamps with LED-based lighting systems in residential and non-residential applications</i>	As demonstrated in “Carbon to Light ⁴ ” the use of portable, cheap kerosene lamps is prevalent across populations across East Africa. <i>Solar Solutions Ltd</i>

³ <http://cdm.unfccc.int/>

⁴ <http://light.lbl.gov/pubs.html>. Accessed November 2010

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	will replace consumers kerosene lamps with Project Lamps in accordance with AMS.III.AR version 1
<i>The project lamps shall use rechargeable batteries charged.</i>	All Project Lamps shall use solar energy to energise their installed rechargeable batteries
<i>The manufacture of the project lamps shall certify the products has an average rated life of at least 5,000 hours, or 10,000 hours where applicable</i>	All Project Lamps shall have suitable manufacturer certification that the units have an average life of at least 5,000 hours.
<i>The manufacture shall certify that the Project Lamps battery charging efficiency is at least 50% at the time of the customer’s purchase</i>	Manufacturer certification shall provide that battery charging efficiency of at least 50% at the time of purchase
<i>Each Project Lamp shall be provided with a one year warranty which specifically covers free replacement or repair of failed lamps, batteries and where applicable solar panels</i>	All Project Lamps shall be sold with a one year warranty for full repair or full replacement
<i>All Project Lamps carry identification which enables them to be marked as being within the “Project” and avoid double counting</i>	All Project Lamps shall have a unique identification so that the lamps are marked as being within the CPA.
<i>The disposal of batteries shall be in compliance with the regulations of the host country</i>	There are no laws for disposal of batteries in the countries included in this PoA
<i>Detailed technical specification and supporting documentation of the Project Lamps are made available and in the PDD</i>	Technical specification of the Project Lamps has been included in this CPA in Section A.4. Further Supporting documentation shall be provided to the DOE on request
<i>No more than five Project Lamps per household shall be recognised for generating emission reductions within the Project</i>	A maximum of five Project Lamps per household shall be recognised within this Project
<i>In the absence of the Project, the burning of kerosene fuel in lanterns would be used as the primary source of light</i>	As demonstrated in “Carbon to Light” the use of portable, cheap kerosene lamps is prevalent across populations across East Africa. <i>Solar Solutions Ltd</i> will replace consumers kerosene lamps with project lamps in accordance with AMS.III.AR version 1
<i>The project lamps will generate electricity and be used onsite and locally by the user</i>	The project lamps will generate electricity that shall be used onsite and locally be the user

B.3. Assessment and demonstration of additionality of the small-scale CPA , as per eligibility criteria listed in the Registered PoA:

Additionality is demonstrated at the PoA level. Refer PoA-DD for details on how the proposed project activity is Additional.

B.4. Description of the sources and gases included in the project boundary and proof that the small-scale CPA is located within the geographical boundary of the registered PoA.

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	Source	Gas	Included?	Justification / Explanation
Baseline Activity	GHG emissions generated from the combustion of kerosene fossil fuel	CO ₂	Included	Main emission source
Project Activity	None (Since Solar energy is used to charge the batteries)	None	Not Included	None

B.5. Emission reductions:

B.5.1. Data and parameters that are available at validation:

Data / Parameter:	<i>FUR (ID 1)</i>
Data unit:	Litres/hour
Description:	Observed hourly kerosene fuel use rate by families in Light After Dark, Malawi CPA
Source of data used:	PoA document
Value applied:	0.0485
Justification of the choice of data or description of measurement methods and procedures actually applied:	The data for kerosene consumption is taken common for all household in the PoA as it is based on observed data gathered by third-party sample studies and a range of independent reports
Any comment:	

Data / Parameter:	<i>DV (ID 2)</i>
Data unit:	Tco2
Description:	Emissions factor
Source of data used:	Calculated based on <i>FUR (ID 1)</i>
Value applied:	0.149
Justification of the choice of data or description of measurement methods and procedures actually applied:	This value is calculated in accordance with AMS.III.AR calculation for the DV parameter.
Any comment:	

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Data / Parameter:	<i>DB_j</i> (ID 3)										
Data unit:	Value										
Description:	Dynamic baseline factor										
Source of data used:	PDD										
Value applied:	5%										
Justification of the choice of data or description of measurement methods and procedures actually applied:	<p>An annual growth rate of 5% will be applied to this value to reflect rising consumption of kerosene in East Africa. It has been highlighted that typically, kerosene use exceeds income⁵.</p> <table border="1"> <thead> <tr> <th>Country</th> <th>Conservative Economic growth</th> </tr> </thead> <tbody> <tr> <td>Malawi</td> <td>6.4%⁶</td> </tr> <tr> <td>Kenya⁷</td> <td>5.5 %</td> </tr> <tr> <td>Ethiopia⁸</td> <td>10%</td> </tr> <tr> <td>Zambia⁹</td> <td>6.7%</td> </tr> </tbody> </table>	Country	Conservative Economic growth	Malawi	6.4% ⁶	Kenya ⁷	5.5 %	Ethiopia ⁸	10%	Zambia ⁹	6.7%
Country	Conservative Economic growth										
Malawi	6.4% ⁶										
Kenya ⁷	5.5 %										
Ethiopia ⁸	10%										
Zambia ⁹	6.7%										
Any comment:											

Data / Parameter:	<i>h</i> (ID 4)
Data unit:	Hours/day
Description:	Utilization rate: average operating hours are the average operational hours of kerosene lamps in the baseline
Source of data used:	AMS.III.AR (version 1)
Value applied:	3.5
Justification of the choice of data or description of measurement methods and procedures actually applied:	This value is fixed for the duration of the project; unless observed data further qualifies this value
Any comment:	

Data / Parameter:	<i>d</i> (ID 5)
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⁵ Mulugeta, E. 2004. "The Demand for Kerosene and per Capita Income in Ethiopia." Ethiopian Journal of Economics 13(2) <http://ajol.info/index.php/eje/article/view/39807>

⁶ <http://www.africaneconomicoutlook.org/en/countries/southern-africa/malawi/>

⁷ <http://www.africaneconomicoutlook.org/en/countries/east-africa/kenya/>

⁸ <http://www.africaneconomicoutlook.org/en/countries/east-africa/ethiopia/>

⁹ <http://www.africaneconomicoutlook.org/en/countries/southern-africa/zambia/>

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Data unit:	Days
Description:	The number of days the lamp operates for
Source of data used:	AMS.III.AR (version 1)
Value applied:	365
Justification of the choice of data or description of measurement methods and procedures actually applied:	This is a fixed value.
Any comment:	

Data / Parameter:	<i>EF_{CO2} (ID 6)</i>
Data unit:	KgCO ₂ / litre
Description:	Kerosene fuel CO ₂ emission factor of fuel type
Source of data used:	AMS.III.AR (version 1)
Value applied:	2.4
Justification of the choice of data or description of measurement methods and procedures actually applied:	
Any comment:	

Data / Parameter:	<i>L (ID 7)</i>
Data unit:	Value
Description:	Leakage factor
Source of data used:	AMS.III.AR
Value applied:	1.0
Justification of the choice of data or description of measurement methods and procedures actually applied:	
Any comment:	

Data / Parameter:	<i>N (ID 8)</i>
Data unit:	Value
Description:	Number of fuel-based lamps replaced per Project Lamp
Source of data used:	AMS.III.AR

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Value applied:	1.0
Justification of the choice of data or description of measurement methods and procedures actually applied:	
Any comment:	

Data / Parameter:	<i>N-G (ID 9)</i>
Data unit:	Value
Description:	Net-to-gross factor
Source of data used:	AMS.III.AR
Value applied:	1.0
Justification of the choice of data or description of measurement methods and procedures actually applied:	
Any comment:	

Data / Parameter:	<i>W_i (ID10)</i>
Data unit:	Watts
Description:	Wattage of project lamps distributed to end users, of type <i>i</i>
Source of data used:	Lamp Manufacturer
Value applied:	0.3
Justification of the choice of data or description of measurement methods and procedures actually applied:	
Any comment:	

B.5.2. Ex-ante calculation of emission reductions:

The CPA uses the following calculation approach as stipulated by the methodology AMS-III.A.R.:

Equation 1, Baseline Emissions:

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$$BE_Y = DV * GF_Y * DB_Y$$

Parameter	Unit	Description	Source
<i>DV</i>	tCO2e	Default emissions factor	
<i>GF_Y</i>	Number	Number of consumers supplied with Project Lamps	As defined in AMS.III.AR
<i>DB_Y</i>	%	<p><i>Option 1:</i> = 1.0 in the absence of relevant information</p> <p><i>Option 2:</i> = 1.0 + FFG. FFG is defined as the documented national growth rate of kerosene fuel use in lighting from the preceding 3 or 5 years (depending on the availability of reliable data)</p>	As described in later sections.

Equation 2, Project Emission:

According to the small scale methodology AMS III.AR, Project Emissions (*PE_y*) will depend on the project lamp charging mechanism utilized.

The methodology states that *PE_y*= Zero (0) in the case of Project Lamps whose batteries are charged by:

- (a) renewable energy system (e.g. photovoltaic systems or mechanical systems such as wind battery chargers)
- (b) standalone distributed generation system (e.g. a diesel generator set) or a mini-grid, if the mini grid or distributed generation system is entirely powered by renewable energy generation unit(s).

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Since the Project Lamps under this CPA use renewable energy sources (solar) the Project Emissions will be Zero (0) as stipulated by the methodology.

Equation 3, Emission Reduction: According to the methodology AMS-III.AR., the annual emissions reductions are calculated as :

$$ER_y = \sum_{i,j} N_{i,j} \times (BE_{y,i} - PE_{y,i,j}) \times (OF_{y,i,j})$$

Parameter	Unit	Description	Value	Source
N_{ij}	Quantity	Number of Project Lamps distributed to end users of type i, with charging method 'j' The emissions reductions shall be considered from the date of completion of distribution of the project lamps to end users	Recorded by CPA and the distributor	CPA reporting and monitoring
$OF_{y,i,j}$	%	Percentage of Project Lamps distributed to end users that are operating in service in year, y	Assumed to be 100%	Assumed based guidance from AMS.III-AR

B.5.3. Summary of the ex-ante estimation of emission reductions:

Year	Estimation of project activity emissions (tonnes of CO ₂ e)	Estimation of baseline emissions (tonnes of CO ₂ e)	Estimation of leakage (tonnes of CO ₂ e)	Estimation of overall emission reductions (tonnes of CO ₂ e)
Year 2012	0	25707	0	25707
Year 2013	0	46841	0	46841
Year 2014	0	49183	0	49183

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Year 2015	0	51642	0	51642
Year 2016	0	54224	0	54224
Year 2017	0	56935	0	56935
Year 2018	0	59782	0	59782
Total (tonnes of CO ₂ e)	0	344314	0	344,314

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

B.6.1. Description of the monitoring plan:

The CPA Implementation entity has gone with

Option 1: Project Lamps are assumed to operate for two years after project lamp distribution to end-users. Therefore, emission reductions can only be claimed for two years

Since the CPA is going with Option 1 of the methodology the Project Activity will record the following data:

1. *Number of lamps distributed to end users under the project activity, identified by the type of project lamps (lamp wattage, battery type, charging method, the date of supply).*

The following database will be operated and maintained to ensure completeness and accuracy of monitoring information:

- **Sales record (SR):** Project Lamp systems deployed sales records
- **Sample database (DB i,a):** sample database for deployed LED lights
- **Periodic check A (SG i,v):** regular review of sample group for monitoring of deployed LED Lamps

Each Project Lamp sold will only be eligible to generate CERs for a period of two years from the date of sale. Monitoring will be ongoing throughout the Project; and will take account of verification periods.

The table below shows the main characteristics of each database: parties involved, periodicity and format.

	LED lights deployed sales records (SR)
<i>Parties involved</i>	Primary data collection: project developer Database maintenance: project developer

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Periodicity	Continuous
Format	Paper or electronic for primary data
	Electronic database
Data saving	All data shall be saved for the whole crediting period, plus an additional two years

The Sale Record (SR)

The Sales Record (SR) database has been established and shall contain the following information:

- Lamps sold
- Serial number of lamp
- Date of sale
- Distributor or dealer
- Customer details (where provided)
- Customer mobile telephone number (or landline number, where applicable)

The purpose of SR database is to provide enough information to enable full monitoring for each monitoring period.

The following variables will be monitored during the Project:

Data / Parameter:	n_l (ID14)
Data unit:	Quantity
Description:	Number of units sold
Source of data to be used:	CPA Project
Value of data applied for the purpose of calculating expected emission reductions in section B.5	Project developer database
Description of measurement methods and procedures to be applied:	The sales date is defined as the date of completion of distribution of the Project Lamps to the customers.
QA/QC procedures to be applied:	Data will be collected by the project developer. CarbonSoft will be responsible to store the data for the crediting period and an additional two years.
Any comment:	

Data / Parameter:	D_{intro} (ID 15)
Data unit:	Date
Description:	To be conservative, the date that the Project Lamp was purchased, rounded to the 1 st of the month following. This number is required to conservatively calculate the emission reductions for a

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	verification period.
Source of data to be used:	GI (ID 12)
Value of data applied for the purpose of calculating expected emission reductions in section B.5	E.g., 01/03/2011
Description of measurement methods and procedures to be applied:	Based on the exact date of sale being input to the database, data will be automatically rounded up to the 1 st of the following month.
QA/QC procedures to be applied:	Data will be collected by the project developer. CarbonSoft will be responsible to store the data for the crediting period and an additional two years.
Any comment:	

Data / Parameter:	GI (ID 16)
Data unit:	<ol style="list-style-type: none"> 1) Quantity of lamps sold 2) Serial number of each lamp 3) Date of sale 4) Name of distributor or dealer 5) Customer details (where provided)
Description:	General information (“GP”) is a database that contains basic information on all Project Lamps sold
Source of data to be used:	Project developer database.
Value of data applied for the purpose of calculating expected emission reductions in section B.5	Various.
Description of measurement methods and procedures to be applied:	All information will be collected locally by project developer staff, project partners and stored in the project developer database.
QA/QC procedures to be applied:	Data will be collected by the project developer. CarbonSoft will be responsible to store the data for the crediting period and an additional two years.
Any comment:	This sales data, in its detailed form, is considered by project developers to be commercially sensitive information. The information will be provided to the DOE, and as required aggregated data can be made available. CarbonSoft will treat detailed sales data as commercially confidential information.

Data / Parameter:	UL (ID 17)
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Data unit:	Hours
Description:	Useful life of Project Lamps
Source of data to be used:	Data provided by manufacturer of the Project Lamp.
Value of data applied for the purpose of calculating expected emission reductions in section B.5	Option 1: the minimum useful life of the lamp as provided by the manufacturer is 5,000
Description of measurement methods and procedures to be applied:	
QA/QC procedures to be applied:	
Any comment:	

Data / Parameter:	$\Phi_v(t)$ (ID 18)
Data unit:	Lumen
Description:	Luminous Flux after time t
Source of data to be used:	Third party testing using applicable standard and testing protocol
Value of data applied for the purpose of calculating expected emission reductions in section B.5	
Description of measurement methods and procedures to be applied:	The value is provided by a 3 rd party after testing the sampled lamps using a standard testing protocol
QA/QC procedures to be applied:	
Any comment:	

Data / Parameter:	<i>TP</i> (ID 19)
Data unit:	Hours
Description:	Test Period
Source of data to be used:	3 rd party testing using applicable standard and testing protocol
Value of data applied	i) Option 1: project developers will supply suitable third-party certificates to

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for the purpose of calculating expected emission reductions in section B.5	demonstrate the Project Lamp meets the minimum useful life of 5,000 hours.
Description of measurement methods and procedures to be applied:	Testing of the Project Lamp shall be confirmed by a third-party testing organisation 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 10% 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.
QA/QC procedures to be applied:	
Any comment:	For a test period of 10,000 hours the luminous flux $\Phi_v(10,000)$ should be greater than or equal to 70% of the initial luminous flux. For a test period of 2,000 hours the luminous flux $\Phi_v(2,000)$ should be greater than or equal to 90%.

Data / Parameter:	n_o (ID 20)
Data unit:	Quantity
Description:	Number of units in operation and in service
Source of data to be used:	Option 1: CPA Project sales records Option 2: Survey to determine number of Project Lamps in year 3 of lamp being used. The sampling survey should employ the following principles: <ul style="list-style-type: none"> • 90% confidence interval • a minimum of 100 participants • random distribution of target population (e.g., size and location) • method to select respondents is random • Conducted by site visits • Only persons above 12 years old are interviewed • The CPA Project shall contain design details of the survey <p>Sampling survey results shall be utilised as the operating assumptions for years 4,5,6 and 7 for Project Lamps in the CPA.</p>
Value of data applied for the purpose of calculating expected emission reductions in section B.5	Project developer database
Description of	The number of units in operation and in service is found through monitoring

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measurement methods and procedures to be applied:	
QA/QC procedures to be applied:	Data will be collected by the project developer. CarbonSoft will be responsible to store the data for the crediting period and an additional two years.
Any comment:	

Data / Parameter:	IL (ID 21)
Data unit:	Lux
Description:	Illumination level
Source of data to be used:	The illumination level is confirmed by a third-party testing organisation based on sample test of Project Lamps using applicable national standards
Value of data applied for the purpose of calculating expected emission reductions in section B.5	
Description of measurement methods and procedures to be applied:	
QA/QC procedures to be applied:	
Any comment:	

Data / Parameter:	SF (ID 22)
Data unit:	Percent (%)
Description:	Amount of energy required by the Project Lamp divided by the total energy required.
Source of data to be used:	The solar fraction is confirmed by a third-party testing organisation based on sample test of project lamps using applicable national standards. The value should stipulate the maximum, minimum and average monthly solar fraction values during the year.
Value of data applied for the purpose of calculating expected emission reductions in section B.5	100 %
Description of measurement methods and procedures to be applied:	

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QA/QC procedures to be applied:	
Any comment:	This shall only be requested where applicable (i.e., for solar energy charging systems)

Data / Parameter:	AT (ID 23)
Data unit:	Hours per day
Description:	Autonomous time or maximum Possible burn time
Source of data to be used:	The autonomous time is confirmed by a third-party testing organisation based on sample test of Project Lamps using applicable national standards
Value of data applied for the purpose of calculating expected emission reductions in section B.5	
Description of measurement methods and procedures to be applied:	
QA/QC procedures to be applied:	
Any comment:	

C.1. Please indicate the level at which environmental analysis as per requirements of the CDM modalities and procedures is undertaken. Justify the choice of level at which the environmental analysis is undertaken:

Please tick if this information is provided at the PoA level. In this case sections C.2. and C.3. need not be completed in this form.

C.2. Documentation on the analysis of the environmental impacts, including transboundary impacts:

No Environment Impact assessment is required for such project activities in Malawi, where the CPA is located.

C.3. Please state whether an environmental impact assessment is required for a typical CPA, included in the programme of activities (PoA), in accordance with the host Party laws/regulations:

No Environment Impact assessment is required for such project activities in Malawi, where the CPA is located.



SECTION D. Stakeholders' comments

The stakeholder consultation was undertaken starting in 02 October 2011 when a product distribution trial was established in the village of Chadzunda which is situated near Blantyre City in Malawi. The stakeholder consultation was held to obtain comments and feedback from stakeholders associated with the project activity.

Blantyre city is the second largest city in the country. It is the capital of the country's Southern Region as well as the Blantyre District. Solar Solutions Ltd. was responsible for distributing the lights in the trial and hosting of the stakeholder consultation. The initial public meeting drew attendants.

Location of the stakeholder consultation meeting:





Aerial View of Chadzunda Village

As solar lamps are still a new technology for consumers in East Africa an initial public meeting was held to:

- Demonstrate the product
- Explain the benefit of solar lamps
- The goals of the Project
- Answer question raised by participants

Minutes of the meeting:

The meeting was called to order at 6.35 am. Introductory remarks were made by Sydney Kampira following which the attendees introduced themselves. The attendees were told how to use the solar lamp and its goodness as compared to the kerosene. Following this, the floor was opened to members to contribute.

The list of comments and their responses is given in the later sections.

The general comments were that solar lamps are a welcome idea, not only because the light was very bright, but that they would also save on kerosene usage. Again kerosene is expensive as compared to buying the light.

There being no other comments the meeting was declared closed at 7.05 am.

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D.1. Please indicate the level at which local stakeholder comments are invited. Justify the choice:

Please tick if this information is provided at the PoA level. In this case sections D.2. to D.4. need not be completed in this form.

D.2. Brief description how comments by local stakeholders have been invited and compiled:

The stakeholders were asked to provide their comments after the showcasing of the lamp. Comments were also invited through email and telephone numbers provided by Solar Solutions Ltd. The following is the list of attendees to the stakeholder consultation meeting held in Chadzunda on the 2nd of October 2011:

1	MAVUTO
2	PAUL
3	CHISOMO
4	SMART
5	DAITON
6	GANIZANI
7	MRS CHILENJE
8	MRS MONTIFORT
9	MR LIBUDA
10	MRS MATHYANGA
11	BEATRICE MOSES
12	ELIZABETH
13	MRS LIMANI
14	MRS MALONGA
15	THANDI
16	DAN
17	MR PHIRI
18	MRS LIBUDA
19	HILDA
20	MRS KOMAKOMA
21	CATREEN CHILENJE

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D.3. Summary of the comments received:

<i>S.No</i>	<i>Comments/Queries</i>
1	How long would it take to charge the lamp?
2	How long would the lamp be effective at night after full charge?
3	How long is the useful life of the lamp ?
4	What would be the cost of the lamp?
5	Does the light have any side effects?
6	Are the batteries readily available?

D.4. Report on how due account was taken of any comments received:

<i>S.No</i>	<i>Comments</i>	<i>Response to comment and if any action required</i>
1	How long would it take to charge the lamp?	It would take 5 hours to charge a solar lamp.
2	How long would the lamp be effective at night after full charge?	After a full charge, the lamp would be effective up to 8 hours at night.
3	How long is the useful life of the lamp?	The useful life of the lamp is about three years.
4	What would be the cost of the lamp?	The lamp may cost about USD10.00.
5	Does the light have any side effects?	The light is environmental friendly. So far there have been no reports of any side effects.
6	Are the batteries readily available?	The batteries are readily available in Malawi.

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7	How long would it take to charge the lamp?	It would take 5 hours to charge a solar lamp.
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There were no comments made against any component of the project activity and hence no changes were required to the project activity.

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Annex 1

CONTACT INFORMATION ON ENTITY/INDIVIDUAL RESPONSIBLE FOR THE SMALL-SCALE CPA

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Represented by:	Sebastian Foot
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Salutation:	Mr
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Middle Name:	
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Department:	
Mobile:	
Direct FAX:	
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Personal E-Mail:	Sebastian@carbonsoft.net

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Represented by:	
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Salutation:	Mr

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Annex 2

INFORMATION REGARDING PUBLIC FUNDING

Annex 3

BASELINE INFORMATION

Annex 4

MONITORING INFORMATION
