



CPA VALIDATION REPORT

Title of CPA:

Small-scale solar electrical programme, South Africa – CPA-001

Title of PoA to which CPA is to be included:

“Small-scale solar electrical programme, South Africa”

Report No. CCL0024/SAMPP/15072011

Revision No. 05

VALIDATION REPORT

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CPA Title: Small-scale solar electrical programme, South Africa – CPA-001		Country: Republic of South Africa		Estimated CERs (tCO2e): 150,22 annual average (CPA- 01)	
Managing Entity: Blue World Carbon Capital PCC Channel House Green Street St. Helier Jersey		CPA Implementer: Blue World Carbon Capital PCC Channel House Green Street St. Helier Jersey			
GHG reducing measure/technology of the CPAs of the PoA:		The emission reduction would happen by displacement of electricity from the national grid of RSA due to electricity supplied to end users from all independent activities (solar electrical systems installed) under the CPA (used for the captive purpose) which in absence of CPAs of the PoA would have been supplied by electricity from the grid {measure for the CPAs utilising AMS I.F.}. The small scale CPA Installation of a group of the independent activities with size of each individual unit no larger than 0.15 MW and total installed capacity of the group will be limited up to 15 MW in a KwaZulu-Natal province of RSA for captive use.			
Report No.: CCL0024/SAMPP/15072011		Revision: 05		Date of this report: 14/11/2012	
Approved by (Final Report): Adam Simcock				Date of approval: 15/11/2012	
GPS coordinates of the first activity under the CPA:		The verified range of geographic coordinates of first real activity under CPA is /B08-3/ /B08-4/: Latitude: -29.7690 Longitude: 31.0555			
Methodology					
Number: AMS-I.F.	Version: Version 02	Title: Renewable electricity generation for captive use and mini-grid		Scale: Small Scale	SS(s): 1 TA: 1.2
Carbon Check Pty Ltd., (CCL) is commissioned by Blue World Carbon Capital PCC (the CME) to perform the validation of the Program of activities "Small-scale solar electrical programme, South Africa", with regard to the relevant requirements for CDM activities.					
Summary of the CPA Validation and inclusion Opinion:					
<input checked="" type="checkbox"/> The review of the CPA design documentation and the subsequent follow-up interviews have provided CCL with sufficient evidence for the determination of the CPA's fulfillment of all stated criteria in the PoA. In our opinion, the CPA meets all relevant UNFCCC requirements for the CDM. Therefore, CCL recommends the CPA for inclusion under the PoA to the CDM Executive Board (CDM-EB).					
<input type="checkbox"/> The review of the CPA design documentation and the subsequent follow-up interviews has not provided CCL with sufficient evidence for the determination of the CPA's fulfillment of all stated criteria in the PoA. Therefore, CCL will not recommend the CPA for inclusion under the PoA and will inform the PoA managing entity, CPA implementer(s) and the CDM Executive Board of this decision.					

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VALIDATION TEAM		ROLE						
Full Name	Appointed for Sectoral scopes (Technical Areas)	Team Leader	Auditor	Local Expert	Team Member (Auditor)	Technical Expert	Co-Technical Reviewer	Technical Reviewer
Ravi Shankar	1.2, 2.1, 2.2, 3.1, 13.1	X		X		X		
Amit Anand	1.2		X					
Vikash Kumar Singh	1.2, 3.1, 13.1							X

VALIDATION PHASE	VALIDATION STATUS
<input checked="" type="checkbox"/> Desk Review	<input type="checkbox"/> Corrective Actions / Clarifications requested
<input checked="" type="checkbox"/> Follow up interviews	<input checked="" type="checkbox"/> Full approval and submission for registration
<input checked="" type="checkbox"/> Resolution of outstanding issues	<input type="checkbox"/> Rejected

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Validation Opinion

Under the validation (by means of document review and on-site interviews with stakeholders), the validation team considers that the CPA description in CPA titled- “Small-scale solar electrical programme, South Africa – CPA-001” as described in the CDM-SSC-CPA-DD of Date 14/11/2012, version 7.0 is accurate and complete; meets the requirements to be included in the PoA titled “Small-scale solar electrical programme”, version 08 (date 12/11/2012) and correctly applies the baseline and monitoring methodology AMS-I.F. (version 02).

Standard auditing techniques have been used for the validation of the project. An analysis, as provided by the applied methodology, demonstrates that the proposed CPA is not a likely baseline scenario. Emission reductions attributable to the CPA are additional to any that would occur in the absence of the project activity. Given that the CPA is implemented as designed, the project is likely to achieve the estimated amount of emission reductions as specified within the CPA-DD /02/.

The validation is based on the information made available to Carbon Check (Pty) Ltd., as well as the engagement conditions detailed in this report. The validation has been performed following the VVM requirements.

The validation was executed in the following steps so far:

- Receipt of PoA-DD, CPA-DD (generic) and CPA-DD (real case) version 2.0, dated 07/12/2011 for global stakeholder comments.
- Global stakeholder comment process (23/12/2011 to 21/01/2012)
- On-site visit with stakeholder interviews (05/03/2012)
- Issue of checklist with corrective action requests (CARs) and clarification requests (CLs) and the draft validation report and protocol
- Desk review of revised DDs applying AMS-I.D. (version 17) and AMS-I.F. (version 02)
- Review of responses for CARs/CLs
- Issue of the final validation report and protocol

The single purpose of this report is its use during the inclusion process (of the real case CPA) at the time of requesting registration. The review of the CPA-DD /02/, subsequent follow-up interviews, and further verification of references have provided Carbon Check (Pty) Ltd., with sufficient evidence to determine the fulfilment of stated criteria in the PoA-DD /20/ and g-CPA-DD /21/. In the opinion of Carbon Check (Pty) Ltd., the CPA meets all relevant UNFCCC requirements for the CDM if the underlying assumptions do not change. Carbon Check (Pty) Limited recommends the real case CPA and the PoA for registration.

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Abbreviations

BE	Baseline Emissions
BWCC	Blue World Carbon Capital
CAR	Corrective Action Request
CC	Cross Check
CCL	Carbon Check (Pty) Ltd
CDM	Clean Development Mechanism
CDM M&P	Modalities and Procedures CDM
CER(s)	Certified Emission Reduction(s)
CL	Clarification Request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CME	Coordinating/managing entity and participants of PoA
CPA	CDM Programme Activity
CPA-DD	CDM Programme Activity design document
DR	Document Review
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EIA	Environmental Impact assessment
ER	Emission Reductions
FAR	Forward Action Request
GHG(s)	Greenhouse gas(es)
GWP	Global Warming Potential
I	Interview or any follow up action
IPCC	Intergovernmental Panel on Climate Change
LoA	Letter of Approval
MoV	Means of Validation/Verification
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-governmental Organization
ODA	Official Development Assistance
PE	Project Emission
PoA	Programme of Activities
PoA-DD	Programme of Activities design document
PP(s)	Project Participant(s)
Ref.	Document Reference
RSA	Republic of South Africa
SD	Sustainable Development
SS(s)	Sectoral Scope(s)
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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Appendix A: Validation Protocol

Appendix B: Certificate of Competence

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1 INTRODUCTION

Blue World Carbon Capital PCC (BWCC) (hereafter referred as “CME”) has commissioned the DOE Carbon Check (Pty) Ltd., to assess the information in the CDM-CPA-DD for the CPA title “Small-scale solar electrical programme, South Africa – CPA-001” (hereafter called “the CPA”) against the requirements for including CPAs to the PoA “Small-scale solar electrical programme, South Africa” and further documentation requirements for including CPAs to a PoA.

This report summarizes the findings of the validation of the CDM Programme Activity Design Document (CPA-DD), performed on the basis of UNFCCC criteria for the PoAs under the CDM, as well as criteria given to provide for consistent programme operations, monitoring and reporting. The term “UNFCCC criteria” refers to Article 12 of the Kyoto Protocol, the CDM modalities and procedures, the modalities and procedures for CDM project activities, and the subsequent decisions by the COP/MOP and CDM Executive Board. In addition to these criteria, host country criteria are also taken into account.

1.1 Objective

The assessment of a CPA requesting to be included in a PoA shall ensure that all the requirements determined in the PoA are met. The assessment was performed on the basis of the eligibility and additionality criteria established in the PoA and the UNFCCC criteria for including CPAs to programme of activities under the Clean Development Mechanism (CDM), as well as criteria given to provide for consistent project operations, monitoring and reporting according to AMS-I.D. (version 17) and/or AMS-I.F. (version 02).

1.2 Scope

The scope of the validation is an independent and objective review on the small-scale CDM CPA design document (hereinafter referred to as 'CPA-DD') and other relevant documents. The DOE shall scrutinize the information in the CPA-DD to assess compliance with the eligibility criteria and criteria for demonstrating additionality established by the PoA, to check correct application of AMS-I.D. (version 17) and/or AMS-I.F. (version 02) and to check compliance with documentation requirements for CPAs.

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

2 METHODOLOGY

The validation consists of the following four phases:

- I. A desk review of the specific CPA-DD with relevant information to be included in PoA.
- II. On-site visit and follow-up interviews with programme stakeholders; and
- III. The resolution of outstanding issues and the issuance of the final validation report and opinion.

The following sections outline each step in more detail.

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2.1 Document Review

The following table lists the documentation that was reviewed during the validation.

Reference No.	Documents
/01/	CPA-DD specific (webhosted version), "Small-scale solar electrical programme in South Africa-CPA-001", version 2.0, Date - 07/12/2011
/02/	CPA-DD specific (final version), "Small-scale solar electrical programme in South Africa-CPA-001", Version 7.0, Date - 14/11/2012
/03/	Emission reduction spread sheet corresponding to /01/
/04/	Emission reduction spread sheet corresponding to /02/
/05/	<ol style="list-style-type: none"> 1. Letter of Approval from the DNA of Republic of South Africa (dated 08/05/2012), authorizing Blue World Carbon Capital PCC as the project proponent and the coordinating and managing entity (CME) to participate in the CDM project. 2. E-mail from DNA of Republic of South Africa (dated 18/09/2012) confirming the validity of LoA.
/06/	Technical specifications of solar photovoltaic modules (YL 185 P-23b / 1310x990 Series)
/07/	The Management System for the South African Small-Scale Solar Electrical Programme Version 02 (dated 18/10/2012).
/08/	<p>Declaration from the CME (dated 07/08/2012) on:</p> <ol style="list-style-type: none"> 1. PoA is a voluntary action by CME and is not mandated by any law or regulations of republic of South Africa. 2. CPA implementers/operators are aware and agree for participation in PoA voluntarily. 3. No ODA involved/diverted as a result of the PoA.
/09/	Signed Activity Information Form (Table 6 of The Management System for the South African Small-Scale Solar Electrical Programme) dated 23/10/2012
/10/	Signed agreement between seller of the solar electrical system (Solar Total) and individual activity owner, dated 23/10/2012 (Annex 1B of The Management System for the South African Small-Scale Solar Electrical Programme)
/11/	Purchase order for solar electrical system, dated 01/08/2012
/12/	Proof for GPS coordinates of the CPA site.
/13/	Certification of Incorporation of Blue World Carbon Capital PCC (Registered Number 108374), under "Companies (Jersey) Law 1991" dated 16/06/2011
/14/	Certification of Incorporation of Blue World Carbon Asset Management (Pty) Ltd. (Registration No.: 2009/002466/07, dated 09/02/2009; Certificate issued by Registrar of Companies & close corporations.
/15/	<p>Department of Environmental Affairs; National Environmental Management Act, 1998 (Act No. 107 OF 1998)</p> <ol style="list-style-type: none"> 1. Environmental Impact Assessment Regulations (No. R. 543), dated 18/06/2010 2. Listing Notice 1: List of Activities and Competent Authorities Identified in Terms of Sections 24(2) and 24D (No. R. 544), dated 18/06/2010 3. Listing Notice 2: List of Activities and Competent Authorities Identified in Terms of Sections 24(2) and 24D (No. R. 545), dated 18/06/2010
/16/	Grid Emission Factor (GEF) calculation Sheet
/17/	The Electricity Regulation Act, 2006 (Act No. 4 of 2006) (http://www.energy.gov.za/files/policies/NationalEnergyRegulatorAmendmentBill.pdf)
/18/	Integrated resource plan for electricity 2010-2030 (http://www.energy.gov.za/IRP/2010/IRP_2010.pdf)
/19/	Load factor of the solar systems: "The National Energy Regulator of South

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	Africa, Review of Renewable Energy Feed - In Tariffs, Table A7, page 30.” (http://www.nersa.org.za/Admin/Document/Editor/file/Electricity/Consultation/Documents/Review%20of%20Renewable%20Energy%20Feed-In%20Tariffs%20Consultation%20Paper.pdf)
/20/	PoA-DD for “Small-scale solar electrical programme in South Africa”, Version 08, Date – 12/11/2012
/21/	Final CPA-DD template
/22/	CPA database (version 01) dated 24/10/2012
/23/	Declaration from BWC on CPA 001 fulfilling the eligibility and applicability criteria for inclusion in PoA (dated 19/10/2012)
/24/	Letter from BWCC PCC for withdrawal of “ Microscale solar electrical programme, South Africa ” dated 25/10/2012
/25/	Electricity bill from the owner of the system dated 19/10/2012
/26/	Implementation Plan of the CPA dated 23/10/2012

Referred documents/websites:

/B01/	CDM Validation and Verification Manual version 01.2. EB 55 (Annex 1)
/B02/	<ol style="list-style-type: none"> AMS-I.D. Grid connected renewable electricity generation (version 17) AMS-I.F. Renewable electricity generation for captive use and mini-grid (version 02).
/B03/	Tool to calculate the emission factor for an electricity system, version 02.2.1, EB 63 (Annex 19)
/B04/	<p>PoA Specific guidelines / standards published by UNFCCC:</p> <ol style="list-style-type: none"> CDM programme of activities design document form (CDM-PoA-DD) Version 01, EB 33 CDM programme activity design document form (CDM-CPA-DD) Version 01, EB 33 Procedures for registration of a programme of activities as a single CDM project activity and issuance of certified emission Reductions for a programme of activities, Version 04.1, EB 55 (Annex 38) Procedures for review of erroneous inclusion of a CPA, version 03, EB 61 (Annex 22) Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities, version 01, EB 65 (Annex 03) Clarifications regarding the “Procedures for registration of a programme of activities as a single CDM project activity and issuance of certified emission reductions for a programme of activities”, version 01, EB 60 (Annex 26) Standard for sampling and surveys for CDM project activities and programme of activities, version 02.0, EB 65 (Annex 2) Best practices examples focusing on sample size and reliability calculations version 01.0, EB 67 (Annex 6) Standard for sampling and surveys for CDM PAs and PoAs, version 03.0, EB 69 (Annex 4) Guidelines for sampling and surveys for CDM project activities and programme of activities, version 02.0 EB 69 (Annex 5) Guidelines on assessment of de-bundling for SSC project activities, Version 03, EB 54 (Annex 13) Guidelines for the consideration of interactive effects for the application of multiple CDM methodologies for a programme of activities, version 01.0, EB 68 (Annex 3) Guidelines on the demonstration of additionality of small-scale project activities, version 09.0, EB 68 (Annex 27)
/B05/	General Guidelines for SSC CDM methodologies, version 19.0, EB 69 (Annex 27)
/B06/	Glossary of CDM terms, version 06, EB 66 (Annex 6)
/B07/	K. Branker (et al.) “A review of solar photovoltaic levelized cost of electricity” Renewable and sustainable energy reviews, 15 (2011) 4470-4482
/B08/	<p>Websites:</p> <ol style="list-style-type: none"> www.unfccc.int http://www.cdmpipeline.org/

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3. http://maps.google.com
4. http://www.google.com/earth/index.html

The changes between the CPA-DD version 2.0 (real case), published for the 30 days stakeholder commenting period /01/ and the final version submitted for registration /02/ are addressed in the table 2 of the validation protocol as a part of this report.

The main changes between the CPA-DD, version 2.0 /01/ published for the 30 days stakeholder commenting period and the final version /02/ submitted for registration are presented in the below table as follows:

Topic	CPA-DD - GSC/01/	Final CPA-DD/02/	Assessment
PoA title	"Small-scale solar electrical programme, South Africa"	"Small-scale solar electrical programme, South Africa"	No Change
CPA title	Small-scale solar electrical programme in South Africa-CPA-001	Small-scale solar electrical programme in South Africa-CPA-001	No Change
CPA Implementer	Blue World Carbon Capital PCCC	Blue World Carbon Capital PCCC	No Change
Scope	1: Energy Industries (renewable / non-renewable sources)	1: Energy Industries (renewable / non-renewable sources)	No change
Methodology / Activity	AMS-I.F. (version 02) / Small-scale	AMS-I.F. (version 02)/ Small-scale	No change
Amount of emission reductions (tCO ₂)	115,667	105,152	Emission reduction calculations were revised. Please refer to CAR 6 in table 2 of protocol.
Real case CPA starting Date	23/09/2011	01/08/2012	Starting date has been changed to 01/08/2012 (please refer to closure of CAR 4 in table 2 of protocol).
CPA Location	KwaZulu-Natal Province,	37 Danville Avenue, Durban North – 4051, KwaZulu-Natal Province. (Latitude: -29.7690; Longitude: 31.0555)	CPA location has been modified please refer to closure of CAR 3 in table 2 of protocol).

2.2 Follow-up actions

In order to reach to a Validation Opinion a site visit along with an interview was planned for 05/03/2012. Prior to the interview salient points to be discussed were planned. Date of interview, interviewee and points discussed are given in the following table.

SL. No.	Date	Name and Role	Organization	Topic
/a/	05/03/2012	Joost Van Lier, CME	Blue World Carbon Capital PCC	<ul style="list-style-type: none"> • CME coordinating CDM functions and responsibilities. • Discussion on eligibility criteria and inclusion of a typical CPAs in the PoA including the real case CPA. • Discussion on Additionality

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				<p>justification on PoA level and on typical CPA level including the real case CPA.</p> <ul style="list-style-type: none"> • Discussion on record keeping, monitoring plan and manual. • Discussion on double counting • Discussion on financing pattern (means of finance) of the CPAs(including real case) and involvement of public funding
/b/	05/03/2012	Roth Watson, Country Manager (supplier of solar electrical systems)	Solar Total	<ul style="list-style-type: none"> • Discussion on distribution framework for solar PV systems. • Discussion on the operation and maintenance arrangements for solar PV system to be installed as part of CPA. • Discussion on metering and data recording arrangements from the individual systems

Validation Team considered the views obtained in these interviews while arriving at Validation Opinion.

2.3 Resolution of outstanding issues

The objective of this phase of the validation is to resolve any outstanding issues, which need be clarified prior to Carbon Check’s conclusion on the CPA design. In order to ensure transparency a validation protocol is customised for the programme. The protocol shows in transparent manner criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organises, details and clarifies the requirements a CPA is expected to meet;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The completed validation protocol for the CPA “Small-scale solar electrical programme in South Africa-CPA-001” is enclosed in Appendix A to this report.

Findings established during the validation could either be seen as a non-fulfilment of CDM criteria or where a risk to the fulfilment of programme objectives is identified. Corrective action requests (CAR) are issued, where:

- (i) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
- (ii) The CDM requirements have not been met;
- (iii) There is a risk that emission reductions cannot be monitored or calculated.

A request for clarification (CL) may be raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

A forward action request (FAR) may be raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity.

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Figure 1 Validation protocol tables

Validation Protocol, Table 1 - Requirement checklist					
Checklist Question	Ref.	MoV	Comments	Draft Conclusion	Final Conclusion
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organized in seven different sections.	Makes reference to documents where the answer to the checklist question or item is found.	Explain how conformance with the checklist question is investigated. Examples are document review (DR), interview or any other follow-up actions (I), cross checking (CC) with available information relating to projects, (N/A) means not applicable.	The discussion on how the conclusion is arrived at and the conclusion on the compliance with checklist question so far.	OK is used if the information and evidence provided is adequate to demonstrate compliance with CDM requirements. For CAR, CL and FAR see the definitions above.	OK is used if the information and evidence provided is adequate to demonstrate compliance with CDM requirements.

Validation Protocol, Table 2 - Resolution of Corrective Action Requests and Clarification			
Corrective action requests and/or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
The CAR and/or CLs raised in table 2 are repeated here.	Reference to the checklist question number in Table 2 where the CAR or CL is explained.	The responses given by the project participants to address the CARs and/or CLs.	The validation team's assessment and final conclusion of the CARs and/or CLs.

Validation Protocol, Table 3 - Forward Action Requests			
Forward action request	Reference to Table 2	Response by project participants	Validation Conclusion
The FAR raised in table 2 is repeated here.	Reference to the checklist question number in Table 2 where the FAR is explained.	Response by the project participants on how forward action request will be addressed prior to first verification.	

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2.4 Internal quality control

Before the assessment begins, members of the team covering the technical area(s), sectoral scope(s) and relevant host country experience for evaluating the CDM PoA/CPA are appointed. The validation report including the validation findings underwent a technical review. A technical reviewer qualified in accordance with Carbon Check's qualification scheme for CDM validation and verification performed the technical review.

2.5 Validation team and the technical reviewer(s)

The validation team and the technical reviewers consist of the following personnel:

Validation Team		Type of Involvement						
Full Name	Appointed for Sectoral scopes (Technical Areas)	Supervision of work	Desk review	Site visit & Interview	Report & protocol writing	Technical Expert Input	Reporting support	Technical Reviewer
Ravi Shankar	1.2,2.1, 2.2, 3.1, 13.1	X		X		X		
Amit Anand	1.2		X		X	X	X	
Vikash Kumar Singh	1.2, 3.1,13.1							X

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3 VALIDATION SUMMARY

Under the validation by means of document review and on-site interviews with stakeholders, the validation team considers that the CPA description in CPA titled "Small-scale solar electrical programme in South Africa-CPA-001)", as described in the CDM-CPA-DD of Date 14/11/2012, version 7.0 is accurate and complete; meets the requirements to be included in the PoA titled "Small-scale solar electrical programme, South Africa" and correctly applies the baseline and monitoring methodology AMS-I.F. (version 02). Several clarifications and corrective actions have been raised in during the course of validation and successfully closed (please refer to table-2 of appendix A for details of closure).

3.1 CPA Design Document

The CPA-DD is in compliant with relevant form and guidance as provided by the CPA-DD template /21/ for the POA and UNFCCC requirements under the PoA.

CCL considers that the guidelines for the completion of the CPA documents in their most recent version have been followed. The Managing Entity and the CPA Implementer/s provided relevant information in the applicable CPA-DD sections.

3.2 CPA Description

The following description of the proposed CDM programme activity as per CPA-DD /02/ was verified:

The proposed CPA is developed under the small-scale PoA, 'Small-scale solar electrical programme, South Africa' and introduce photovoltaic system in Republic of South Africa. BWCC PCC is responsible for the implementation of the CPA and is the CME of the PoA. The CPA will reduce GHG emission by replacing fossil fuel fired electricity generation in the national grid of RSA.

The CPA involves the following:

- Installation of a group of the independent activities with size of each individual unit is not larger than 0.15 MW and total installed capacity of the group will be limited up to 15 MW in a pre-determined province of RSA. Activities will be added ex post during the crediting period of the corresponding CPA (**CPA Type 1**).
- Installation of solar photovoltaic electrical systems at the site where there was no solar electrical system in operation prior to the implementation of the activity (greenfield) (**Option 1**).
- Supply the electricity produced to either an identified consumer (end user) or the group of consumers, which would have been supplied with electricity from the national grid of the RSA in the absence of the activity (**scenario (a)**).

Review of CPA DD /02/ and interview with the CME and CPA implementer reveals that the CPA will be implemented in a phase wise manner with a maximum capacity of 3 MW being added each year until the maximum installed capacity of 15 MW is achieved. The same was verified by reviewing the Implementation Plan of the CPA /26/ as provided by CME and CPA implementer. The first activity under the CPA is installation of a 2.4 kW solar photovoltaic module. The details of first activity under the CPA are as:

No.	Renewable Energy Type	Project Owner	Capacity (kW)
1	Solar Photovoltaic System	Anneke van Lier	2.4

All the activities under this CPA will be installed in the province of KwaZulu-Natal in Republic of South Africa. The details of geographical location of first activity is as:

No.	Project Owner	Address	Geographic Reference
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1	Anneke van Lier	37 Danville Avenue, Durban North-4051, KwaZulu-Natal Province, Durban	Latitude: -29.7690	Longitude: 31.0555
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The ownership of the first project activity in the CPA was established through review of purchase order placed /11/ with the technology supplier as well as the review of signed Activity Information Form (Table 6 of The Management System for the South African Small-Scale Solar Electrical Programme) /09/ and was further substantiated by a declaration from Blue World Carbon Asset Management (Pty) Ltd., (CDM Consultant) /12/ and has been verified during the site visit.

As described in CPA-DD/02/, the first activity under this CPA involves installation of solar photovoltaic modules with a total installed capacity of 2.4 kW. For the first activity the solar photovoltaic modules to be installed will be YL 185 P-23b. Each of these modules has 48 high efficiency, polycrystalline solar cells with high transmission and textured glass delivering an efficiency of up to 14.3%. The modules are independently tested to ensure conformance with certification and regulatory standards, and the manufacturing facility is certified to ISO 9001 Quality Management System standards, and it has the following specifications¹:

MODULE TYPE	UNIT	YL 185 P-23B
Power output	[W]	185.0
Power output tolerances	[%]	+/- 3
Module Efficiency	[%]	14.3
Voltage at Pmax, V_{mpp}	[V]	23.5
Current at Pmax, I_{mpp}	[A]	7.87
Open circuit voltage V_{oc}	[V]	29.5
Short circuit current I_{sc}	[A]	8.45
Max. system Voltage	[V]	1,000 VDC

The modules will be connected to an inverter, which is an electrical power converter that changes direct current (DC) to alternating current (AC). This will then be connected to an electricity meter before being supplied to the owner. The generated electricity will be continuously measured and recorded. Data on electricity supply will be digitally archived at least on a monthly basis. The specifications of the solar photovoltaic modules were verified through review of technical specifications of solar PV modules as provided by the technology supplier /06/ and interview with CME /a/ and the technology provider /b/.

The project is still in implementation stage. The expected date of operation is 01/01/2013, as verified from the implementation schedule /09/. The lifetime of the equipment is 25 years and the same has been verified from the technical specifications of solar PV modules as provided by the technology supplier /06/.

The CPA is expected to result in an average annual emission reduction of 150,22 tCO₂e /02/, /04/ for renewable crediting period of 7 years /02/. The start date of crediting period of the CPA as per the CPA-DD /02/ is 01/01/2013 or the effective date of registration whichever is later. Moreover, the expected starting date of crediting period for the CPA is in-line with the provisions provided under CPA-DD template.

The individual activities under the CPA are funded by equity of the individual project owners. The CPA receives no public funding /08/. The starting date of the CPA is 01/08/2012 based on the equipment purchase order /11/ and is after start of validation of the PoA i.e. 23/12/2011, hence applicable to include in PoA.

¹ Electrical parameters at STC (1,000 W/m², 25°C, AM 1.5 according to EN 60904-3)

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The validation team has assessed from UNFCCC website /B08-1/ and on-site interviews /a/ that there is no other similar PoA or CDM project occurring in the CPA area and the CPA is neither registered as an individual CDM project activity or is part of another Registered PoA. The same has been confirmed by a letter from Blue World Carbon Asset Management (Pty) Ltd. (CDM developer) of the PoA /23/.

The information presented in the CPA documents is consistent with the actual planning and implementation of the activity confirmed in the following ways:

- A review and cross check of data and information.
- During site visit, via interviews of relevant stakeholder and personnel with project specific knowledge. In case of doubt, further cross checks through additional interviews were conducted.
- A review of information related to similar projects or technologies, which have been used if available to validate the accuracy and completeness of the project description.

In conclusion, CCL confirms that the CPA project description is sufficiently accurate and complete in order to comply with the requirements of the PoA.

3.2.1 CPA Boundary

The CPA boundary has assessed based on documented evidence, the on-site visit and interviews. Validation team confirms that the identified boundary, the selected sources, and gases as documented in the CPA-DD are justified; hence all sources and GHGs required by the applied methodology /B02-2/ have been included within the project boundary. The spatial extent of the CPA boundary is KwaZulu-Natal province in Republic of South Africa, which is the physical and geographical location of photovoltaic system installed by the BWCC PCC, which is the CPA implementer. Validation team confirms that the identified boundary, the selected gases and sources are documented in the CPA-DD /02/ and fully in line with the requirements set by the PoA-DD /20/.

3.3 Eligibility Criteria for CPA Inclusion

Review of PoA-DD /20/, CPA-DD template /21/ and on-site interview with representatives of CME reveals that the CME of the PoA employs clear and unambiguous criteria for the inclusion of the CPAs. The eligibility criteria have been stated and validation team confirms the eligibility criteria are in line with requirement of § 14, annex 3 of EB 65 /B04-5/. Additionality and applicability of the applied methodology are the eligibility criteria as per the PoA-DD /20/, which is deemed appropriate and acceptable to the validation team. The eligibility criteria can be checked at the CPA level by the CME and shall be confirmed by the DOE before inclusion of the CPAs in the PoA.

Sl. No.	Eligibility Criteria as stated in section B.2 of the CPA-DD /02/ and section A.4.2.2 of the registered PoA-DD /20/	Status marked in CPA-DD /02/	Assessment by the Validation Team
1.	The CPA (type 1 and type 2) shall be located within the geographical boundaries of the RSA.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>This CPA is Type 1.</p> <p>Through the validation of geographical coordinates provided in the CPA it was confirmed that CPA lies within the geographic boundary of RSA.</p> <p>It was further substantiated through:</p> <ul style="list-style-type: none"> • The same has been substantiated by a declaration from Blue World Carbon Asset Management (Pty) Ltd., (CDM Consultant) /12/. • Fully filled and duly signed copy of Table 6 of the CME Management System for the PoA

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			<p>/09/.</p> <p>Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.</p>
2.	<p>For CPA Type 1: the seller of solar electrical system for each activity shall provide the signed Table 6 of the Management System of the PoA and agreement with the owner of activity where he shall contractually agree and sign the following before inclusion into the CPA:</p> <p>A) The activity has neither been and will not be registered as a CDM project activity nor as a CPA under another PoA; and</p> <p>B) The owner is aware that the activity will be subscribed to the present PoA.</p> <p>For CPA Type 2: the owner of each activity shall provide the signed Table 6 of the Management System of the PoA and agreement with CME where he shall contractually agree and sign the following before inclusion into the CPA:</p> <p>A) The activity has neither been and will not be registered as a CDM project activity nor as a CPA under another PoA; and</p> <p>B) The owner is aware that the activity will be subscribed to the present PoA.</p> <p>Moreover for CPA Type 2, BWC shall check the UNFCCC CDM project database to verify that each activity to be included in the proposed CPA, has not been previously submitted to the UNFCCC, before inclusion into the CPA, as well as provide a declaration for the same.</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> NO</p>	<p>This CPA is Type 1 and the compliance with eligibility criteria was substantiated through:</p> <ul style="list-style-type: none"> • Agreement between the seller of solar electrical systems (Solar Total) and the owner of the individual activity /10/. • Fully filled and duly signed copy of Table 6 of the CME Management System for the PoA /09/. <p>Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.</p>
3.	<p>Technology/measure: Each activity to be included into the CPA (type 1 and type 2) shall only use solar electrical technologies.</p> <p>For CPA type 1: the installed capacity of each activity shall be equal or less than 0.15 MW.</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> NO</p>	<p>This CPA is Type 1 and the compliance with eligibility criteria was substantiated through:</p> <ul style="list-style-type: none"> • Technical specifications provided from the seller of solar electrical systems (Solar Total) for the solar PV module /06/. • Fully filled and duly signed copy

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	<p>For CPA type 2: the installed capacity of the CPA shall be equal or less than 15 MW.</p> <p>Services: Each activity under the CPA (type 1 and type 2) shall be connected to either:</p> <p>I) An identified consumer (end user) or group of consumers, which would have been supplied with electricity from the national grid of the RSA in the absence of the activity (where excess electricity may be supplied to the grid) or;</p> <p>II) to the national grid of the RSA</p> <p>Furthermore the identified consumer or group of consumers which will be supplied electricity from the activities under the CPA shall be connected to the grid before the activity implementation in line with the requirements of § 1 of AMS-I.F. (Version 02),</p>		<p>of Table 6 of the CME Management System for the PoA /10/.</p> <ul style="list-style-type: none"> • Electricity bill from the owner of the system /25/. <p>Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.</p>
4.	<p>The start date of the activity under CPA (type 1 and type 2) shall be after the date of start of global stakeholder process for the PoA (23/12/2011).</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> NO</p>	<p>This CPA is Type 1 and the compliance with eligibility criteria was substantiated through:</p> <p>A signed equipment purchase contract with the seller of the solar electrical system (Solar Total) and the owner of the activity /11/, which was signed on 01/08/2012. The date is after the date of start of global stakeholder process for the PoA (23/12/2011).</p> <p>Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.</p>
5.	<p>Both CPA type 1 and type 2 shall meet the applicability conditions and other requirements of AMS-I.D. (version 17) and/or AMS-I.F. (version 02).</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> NO</p>	<p>This CPA is Type 1 and the compliance with eligibility criteria was substantiated through:</p> <ul style="list-style-type: none"> • Technical specifications provided from the seller of solar electrical systems (Solar Total) for the solar PV module /06/. • Fully filled and duly signed copy of Table 6 of the CME Management System for the PoA /09/. • Electricity bill from the owner of the system /25/. <p>Validation team based on review of PoA-DD/21/ (section A.4.2.2), CPA-DD /02/ and emission reduction spread sheet /04/ along with above-mentioned</p>

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			documents confirms that the subject CPA complies with the requirement of applied version of methodology i.e. AMS-I.F. (version 02). Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.
6.	Both CPA types shall demonstrate additionality as per Annex 27 of EB 68 (Version 09.0) Each and every CPA to be included into this PoA has to employ the solar technologies as per eligibility criteria 3. This criterion also states that “Each activity under the CPA (type 1 and type 2) shall be connected to either: i) An identified consumer (end user) or group of consumers, which would have been supplied with electricity from the national grid of the RSA in the absence of the activity (where excess electricity may be supplied to the grid) or; ii) to the national grid of the RSA”	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	As the subject CPA involves installation of solar PV technologies (for captive use by individual users which, would have been supplied with electricity from the national grid of the RSA in the absence of the activity), which do not require demonstration of additionality and are automatically additional as per § 2 and § 2(a) of Annex 28 of EB 67. The same was substantiated through: <ul style="list-style-type: none"> • Technical specifications provided from the seller of solar electrical systems (Solar Total) for the solar PV module /06/. • Fully filled and duly signed copy of Table 6 of the CME Management System for the PoA /09/. • Equipment purchase order /11/. • Electricity bill of the individual project owner /25/. Every CPA under this PoA involves installation of solar electrical technology and is deemed additional. Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.
7.	For CPA (type 1 and type 2) environmental impact assessment shall be carried out in line with NEMA ² regulation ³	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	Validation team based on review of NEMA regulation /15/ confirms that CPA (Type1) are not required by law carry out EIA. Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.
8.	No official Development Aid shall	<input checked="" type="checkbox"/> Yes	Validation team based on review of

² NEMA: National Environmental Management Act. Also see section C.3.

³ Related to the capacity, size or other characteristics of the plant

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	be involved or diverted as a result of activities under the CPA (type 1 and type 2).	<input type="checkbox"/> NO	<p>declaration (dated 07/08/2012) from BWCC PCC /08/ and agreement between seller of solar electrical system (Solar Total) and owner of the activity /10/ confirms that there is no involvement or diversion of ODA to this CPA as a result of implementation of activities therein.</p> <p>Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.</p>
9.	For Both CPA types Where applicable, target group (e.g. domestic/commercial/industrial, rural /urban, grid-connected/off-grid) and distribution mechanisms (e.g. direct installation) shall be identified in accordance with applied methodology i.e., AMS-I.D. (version 17) and AMS-I.F. (version 02)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>The compliance with eligibility criteria was substantiated through:</p> <ul style="list-style-type: none"> • Technical specifications provided from the seller of solar electrical systems (Solar Total) for the solar PV module /06/. • Fully filled and duly signed copy of Table 6 of the CME Management System for the PoA /09/. <p>Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.</p>
10.	For CPA (type 1 and type 2) sampling requirements shall be assessed and carried out in line with requirements of Annex 4 & 5 of EB 69.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>Validation team based on review of PoA-DD/20/ (section A.4.4.2), CPA-DD /02/ confirms that the subject CPA and CPAs under this PoA does not opt for sampling for verification of CPA.</p> <p>Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.</p>
11.	For both CPA types Where applicable, the conditions that ensure that CPA in aggregate meets the small-scale or micro-scale threshold criteria and remains within those thresholds throughout the crediting period of the CPA shall be assessed in accordance with either Annex 26 of EB 68 (version 04.0) for micro-scale threshold or CMP.2, § 28 for small-scale thresholds.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>The compliance with eligibility criteria was substantiated through:</p> <ul style="list-style-type: none"> • Technical specifications provided from the seller of solar electrical systems (Solar Total) for the solar PV module /06/. • Fully filled and duly signed copy of Table 6 of the CME Management System for the PoA /09/. <p>Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.</p>
12.	For CPA (type 1 and type 2) debundling checks shall be	<input checked="" type="checkbox"/> Yes	This is CPA Type 1.

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	performed in line with EB 54 Annex 13.	<input type="checkbox"/> NO	<p>Validation team based on review of PoA-DD/20/ (section A.4.4.1), CPA-DD /02/ confirms that each of the independent subsystems included in the CPA is no greater than 1% of the small scale thresholds defined by the applied methodology /B02-2/ and the subsystems/measures are indicated to be each implemented at or in multiple locations. Hence, these CDM project activities are exempted from performing a de-bundling check, i.e., considered as being not a de-bundled component of a large-scale activity.</p> <p>Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.</p>
13.	For both CPA types leakage shall be assessed and carried out in accordance with applied methodology i.e., AMS-I.D. (version 17) and AMS-I.F. (version 02), as shown in Table E.2-1 and E.2-2 in the PoA-DD	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>The compliance with eligibility criteria was substantiated through:</p> <ul style="list-style-type: none"> • Technical specifications provided from the seller of solar electrical systems (Solar Total) for the solar PV module /06/. • Fully filled and duly signed copy of Table 6 of the CME Management System for the PoA /09/. <p>Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.</p>

According to the requirements of § 17 and § 18 of annex 3 of EB 65 /B04-5/, the validation team by means of onsite visit interview and through document review /07/ confirms that the CME is competent to check the features of the CPA. The CME system manual /07/ clearly mentions the roles, responsibilities and authorities within the managing entity. The validation team has also confirmed through document review and on site visit interview the procedures to avoid double counting /07/, training and capacity development for personnel, records and documentation control process, Measures for continual improvements of the PoA management /07/.

In conclusion, CCL confirms that the CPA complies with the eligibility criteria requirements of the PoA.

3.4 Additionality

3.4.1 Prior consideration of CDM

As per § 3 of annex 26, EB 60 /B04-6/, “Guidelines for the demonstration and assessment of prior consideration of the CDM” do not apply to PoAs, as at present it is expected that no component of the programme will commence prior to the start date of validation.

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3.4.2 Approach for demonstrating CPA additionality

Key criteria for assessing additionality at CPA level have been explained in section E.5.1 and E.5.2 of PoA-DD /20/. The additionality was proven at the PoA level. The additionality was justified in accordance with the requirements derived § 2 (a) of Annex 27 of EB 68 (version 09.0) /B04-13/.

The key criteria derived from assessment of additionality in section E.5.1 and E.5.2 of PoA-DD /20/ have been put forward as eligibility criteria for inclusion of CPA in PoA. The section E.5.2 of the PoA-DD /20/ clearly demonstrates that CPAs fulfilling these eligibility criteria would be deemed additional.

The criteria set out and justification of fulfillment is presented below:

Sl. No.	Eligibility Criteria as stated in section A.4.3 and E.5.2 of the PoA-DD /21/	Status marked in CPA-DD /002/	Assessment by the Validation Team
1.	<p>A CPA meets the criteria for assessing additionality through the application of § 2 (a) of Annex 27 of EB 68 (Version 09.0)/R04-13/ and shall demonstrate the following:</p> <ul style="list-style-type: none"> • All the future CPAs to be included under the PoA to: <ul style="list-style-type: none"> ○ Use solar electrical technologies to produce electricity; and • Total installed capacity of each future CPA will be smaller or equal to 15 MW installed capacity • Each future CPA under PoA will supply electricity to either: <ul style="list-style-type: none"> ○ An identified consumer (end user) or group of consumers, which would have been supplied with electricity from the national grid of the RSA in the absence of the activity (where excess electricity may be supplied to the grid) or; ○ to the national grid of the RSA 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>Validation team based on review of the following:</p> <ul style="list-style-type: none"> • Technical specifications provided from the seller of solar electrical systems (Solar Total) for the solar PV module /06/ and equipment purchase contract /11/ confirm that the CPA involves use of solar PV modules to produce electricity. • Fully filled and duly signed copy of Table 6 of the CME Management System for the PoA /09/ confirms that the electricity produced will be used for captive use by the activity owner and would lead to displacement of national grid of RSA. • Electricity bill /25/ from the owner of the solar PV systems confirms that the user of the generated electricity is grid connected and that it would lead to displacement of national grid of RSA. • PoA-DD /20/, CPA-DD /02/ and emission reduction spread sheet /04/ confirms that the total installed capacity of the CPA is limited to 15 MW. <p>Conclusion: Based on the above assessment and assessment carried out in PoA validation report, validation team concludes that the subject CPA fulfils the requirement as per § 2 of Annex 27 of EB 68 (version 09.0) and is automatically additional and this eligibility criteria of the PoA is complied with.</p>

Based on the assessment above the CCL confirms the following:

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- The criteria are sufficient to demonstrate additionality of the 1st CPA under this PoA.
- The starting date of the CPA complies with the glossary of terms (version 06), and EB 60, Annex 6 guidelines /B06/.
- As per the Guidelines on the demonstration of additionality of small-scale project activities (version 09.0), Annex 27 of EB68” /B04-13/, the project is additional.
- All the arguments and parameters in the CPA-DD are well evidenced.
- The baseline scenario is defined on POA-level.

3.5 Emission Reduction

3.5.1 Parameters determined ex-ante

As per the PoA DD and g-CPA DD template, the following parameters that are determined ex-ante are:

Data/Parameter	Unit	Value
$NCV_{Coal,y}$	GJ/t	19.9
$EF_{CO_2,Coal,y}$	tCO ₂ /GJ	0.0895
$EF_{CO_2,NG,y}$	tCO ₂ /GJ	0.0543
η_{OCGT}	Ratio	0.395
$\eta_{m,y}$	Ratio	0.37
$EF_{grid,CM,y}$	tCO ₂ /MWh	0.988
$LF_{solar\ systems}$	-	0.18

In summary, the parameters determined ex-ante has been presented correctly according to PoA-DD /20/ and g-CPA-DD /21/.

3.5.2 Baseline emission reduction calculation

The CPA-DD /02/ confirms to meet the procedures provided in the methodology /B02-2/ and PoA-DD /20/. The formulae are correctly presented for the determination of emission reductions.

d) Baseline Emissions

As per the methodology AMS-I.F. (version 02) /B02-2/ and PoA-DD, baseline emissions (BE_y) of the CPA are calculated using:

$$BE_y = EG_{Solar\ systems,y}^a \times EF_{grid,CM} \quad (1)$$

Where:

- BE_y = Baseline emissions in year y (tCO₂)
- $EG_{Solar\ systems,y}^a$ = Quantity of net electricity displaced as a result of the implementation of the CDM project activity in year y (MWh)
- $EF_{grid,CM}$ = Combined margin CO₂ emission factor for grid connected power generation (tCO₂/MWh)

$$EG_{Solar\ systems,y}^a = P_{Solar\ systems,y}^a \times LF_{Solar\ systems} \times Hours_y \times EF_{grid,CM} \quad (2)$$

Where:

- $P_{Solar\ systems,y}^a$ = Total capacity of all independent activities which supply electricity to end users under the CPA in year y (MW)
- $LF_{Solar\ systems}$ = Load factor of solar electrical systems,
- $Hours_y$ = Amount of hours in the year y

This CPA involves generation of electricity for captive consumption leading to the displacement of

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national grid of RSA.

The CPA will be implemented in a phase wise manner with a maximum capacity of 3 MW being added each year until the maximum installed capacity of 15 MW is achieved. The same was verified through review of CPA implementation plan /26/ emission reduction sheet /04/ and CPA-DD/03/. Since the total installed capacity over the year will not be constant, an average of the total installed capacity over the year will be used to determine the CER's till the time CPA reaches its maximum capacity of 15 MW.

Year	Installed power capacity at beginning of year from all activities (MW)	Total newly installed power capacity throughout specified year (MW)	Total installed power capacity at end of year from all activities (MW)	Average installed power capacity for specific year (MW)
2013	0.0024	2.9976	3	1.50
2014	3	3	6	4.50
2015	6	3	9	7.50
2016	9	3	12	10.50
2017	12	3	15	13.50
2018	15	0	15	15.00
2019	15	0	15	15.00

The average is determined by adding the total installed capacity at the beginning of a particular year, with the total installed capacity at the end of that particular year and dividing by two. The same approach was found to be conservative by the validation team.

Parameters	Description	Values	Source of data
$EG_{Solar\ systems,y}^a$	Total quantity of electricity supplied to end users from all solar electrical systems installed (MWh)	15,025	Calculated as per equation (2)
$EF_{grid,CM}$	Combined margin CO ₂ emission factor for grid connected power generation (tCO ₂ /MWh)	0.988	Calculated in accordance with requirements of Tool to calculate the emission factor for an electricity system, version 02.2.1. /B03/
$LF_{Solar\ systems}$	Load factor of the solar systems	0.18	The National Energy Regulator of South Africa, Review of Renewable Energy Feed - In Tariffs, Table A7, page 30 /19/.
$Hours_y$	Amount of hours in the year y	8760	Calculated (24 * 365)
$P_{Solar\ systems,y}^a$	Total capacity of all independent activities which supply electricity to end users under the CPA in year y (MW)	15	Implementation plan of CPA /26/

c) Project Emissions

As per the methodology AMS-I.F. (version 02) /B02-2/, project emissions (PE_y) of the CPA is zero as the CPA only including photovoltaic system (PE_y = 0)

c) Leakage

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As per the methodology AMS-I.F. (version 02) /B02-2/Energy generating equipment for the CPA has not transferred from another activity, thus the leakage has not considered.

d) Emission Reduction

Emission reductions are calculated as follows:

$$ER_y = (BE_y - PE_y) - LE_y \quad (3)$$

Parameters	Description	Values	Source of Data
ER_y	Emission reductions in year y (tCO ₂ /y)	15,022	Calculated as per equation (3) above
BE_y	Baseline emissions in year y (tCO ₂ /y)	15,022	Calculated as per equation (1) above
PE_y	Project emissions in year y (tCO ₂ /y)	0	As per the applied methodology AMS-I.F. (Version 02) /B02-2/
LE_y	Leakage emissions in year y (tCO ₂ /y)	0	As per the applied methodology AMS-I.F. (Version 02) /B02-2/

CCL has assessed the calculations of emission reductions. Corresponding calculations have been carried out based on calculation spreadsheets /04/. The parameters and equations presented in the CPA-DD, as well as other applicable documents, have been compared with the information and requirements presented in the PoA-DD /20/, CPA-DD template /21/ and the methodology /B02-2/.

The load factor for the solar systems /19/, total installed capacity of the solar electrical system at the end of each year (phase wise implementation) and for the entire crediting period /26/, net electricity generation have been used for the estimation of emission reduction. The assumptions and data used to determine the emission reductions are listed in the PoA-DD /20/, CER spread sheet /04/ and all the sources have been checked. In summary, the calculations of emission reductions are considered to be correct and according to requirements.

3.6 Monitoring Plan

The monitoring plan presented in the CPA-DD /02/ complies with the requirements of the PoA-DD /20/, the applied monitoring methodology /B02-2/. The assessment team has verified all parameters in the monitoring plan against the requirements of the methodology and no deviations have been found.

The assessment team through document review and interviews with the relevant personnel has reviewed the procedures. The information provided has allowed the assessment team to confirm that the proposed monitoring plan is feasible within the project design. The relevant points of monitoring plan have been discussed with the CME and the CPA implementer. Specifically, these points include the monitoring methodology, data management, quality assurance and quality control procedures to be implemented in the context of the activity.

The parameters that are to be monitored ex-post are:

- Total capacity of all independent activities, which supply electricity to end users under the CPA in year y ($P^a_{\text{solar system},y}$)
- Total quantity of electricity supplied to end users from all independent activities (solar electrical systems installed) under the CPA in year y (MWh) ($EG^a_{\text{solar system},y}$)

In summary, the parameters determined ex-post have been presented correctly according to requirements and are considered in accordance with the applied methodology /B02-2/.

The responsibilities and institutional arrangements for data collection and archiving have been clearly provided. The information provided in the CPA-DD /02/ could be confirmed based on the on-site

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interviews and also through the submitted documentary evidence namely CME management system /07/ covering all requirements as stated in section E.7.2 of PoA DD /20/. Based on the same, it can be confirmed that the CME and the CPA implementer will be able to implement the monitoring plan and the achieved emission reductions can be reported ex-post and verified.

3.7 Stakeholder Consultation

It has been indicated in the PoA-DD /20/, that the local stakeholder consultation has been done at the PoA level. This is deemed appropriate in the context of the CPA of the PoA.

3.8 Environmental Analysis

It has been indicated in the PoA-DD /20/ that environmental analysis shall be provided at the CPA level. This is deemed appropriate and acceptable to the validation team.

EIA is not required for the CPA in accordance with the “NEMA Regulations” by Republic of South Africa /15/. Validation team confirms the same through cross-checks with above mentioned regulations and the technical specifications of the solar photovoltaic system /06/.

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APPENDIX A

THE VALIDATION PROTOCOL FOR CDM PROGRAMME OF ACTIVITIES

Title of CPA:

Small-scale solar electrical programme, South Africa – CPA-001

Title of PoA to which CPA is to be included:

“Small-scale solar electrical programme, South Africa”

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Table 1: Conformity of CDM Programme of Activities

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	GSP	Final
A. GENERAL DESCRIPTION OF CDM PROGRAMME ACTIVITY (CPA)				
A.1. Title of the CPA:				
A.1.1. Does the used CPA title clearly enable to identify the unique CDM programme activity?	/01/	The title of the CPA (CDM-SSC-CPA-DD) clearly enables to identify the unique CDM programme of activities (CDM SSC-PoA-DD). However, the LoA is required to be submitted by the project participant to verify the same. CAR 1: Letter of Approval (LoA) from the Host Country (Republic of South Africa) has not been provided to DOE for Validation.	CAR-1	OK
A.1.2. Are there any indications concerning the revision number and the date of the revision?	/01/	The Specific CPA-DD has indicated in Section A.1 the version of the document, i.e. version number 2.0, and the date of the document, i.e. 07/12/2011.	OK	OK
A.1.3. Is this consistent with the time line of the programme's history?	/01/	Yes, it is consistent with the time line of programme's history.	OK	OK
A.2. Description of the CPA:				
A.2.1. Is the description delivering a transparent overview of the CPA?	/01/	No, Section A.2. of the Specific CPA-DD does not provide a clear overview of the CPA as it does not clearly state the purpose of the CPA and how it reduces GHG emissions, the pre-project scenario and the implementation-schedule. Hence a CAR and a CL have been raised. CAR 2: Description of CPA under section A.2 of the Specific CPA-DD does not provide information on: <ul style="list-style-type: none"> • how the CPA reduces GHG emissions • implementation schedule for the CPA CL 1:	CAR-2 & CL-1	OK

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		The description of the small-scale CPA in Section A.2 of the Specific CPA-DD does not allow the reader to establish clearly whether the project activity involves a greenfield-site or capacity additions or a mix of both.		
A.2.2. Is the project implementation schedule available; are there any risks for delays?	/01/	Depends on the closure of CAR 2 in section A.2.1 above.	Refer CAR-2	OK
A.2.3. Is CPA specific data clearly indicated as per CPA template?	/01/	Yes, CPA specific data clearly indicates as per CPA template.	OK	OK
A.2.4. What proofs are available demonstrating that the programme description is in compliance with the actual situation or planning?	/01/	Depends on the closure of CAR 2 in section A.2.1 above.	Refer CAR-2	OK
A.2.5. Is the information provided by these proofs consistent with the information provided by the CPA-DD and the PoA-DD?	/01/	Depends on the closure of CAR 2 in section A.2.1 above.	Refer CAR-2	OK
A.2.6. Is all information presented consistent with details provided by further chapters of the CPA-DD and the PoA-DD?	/01/	Depends on the closure of CAR 2 in section A.2.1 above.	Refer CAR-2	OK
A.3. Entity/individual responsible for the CPA:				
A.3.1. Does it become evident which entity/individual is responsible for the CPA (the CPA implementer)?	/01/	In section A.3 of the PoA-DD it is mentioned that Blue World carbon capital PCC (BWCC) is the CME as well as the CPA implementer.	OK	OK
A.3.2. Is there any document substantiating that the stated entity/individual is responsible for the implementation of the CPA?	/01/	Depends on the closure of CAR 1 in section A.1.1 above.	Refer CAR-1	OK
A.3.3. Is all information on the CPA implementer provided in consistency with details provided by further chapters of the CPA-DD (in particular annex 1)?	/01/	The name of the entity responsible for the small-scale CPA, as stated in Section A.3. of the Specific CPA-DD, is consistent with Annex 1 of the Specific CPA-DD.	OK	OK
A.4. Technical description of the CPA:				
A.4.1. Identification of the CPA:				
A.4.1.1. Is the Host Party stated and consistent with the information provided in the PoA-DD?	/01/	Yes, as stated in Section A.4.1.1. of both the Specific CPA-DD as the CPA-DD, Republic of South Africa is indicated as the Host Party, which is in line with the PoA-DD.	OK	OK
A.4.1.2. Does the information provided on the location	/01/	Yes, the information provided on the location of the	CAR-3	OK

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<p>of the programme activity allow for a unique identification of the location and the boundary of the CPA in terms of the geographical area?</p>		<p>programme activity identifies Kwazulu-Natal as the area for implementation of CPA001 but doesn't provide for a unique identification of the location and the boundary of the CPA in terms of the geographical area.</p> <p>Hence a CAR has been raised.</p> <p>CAR 3: Information allowing for unique identification of the CPA is not has not been provided.</p>		
<p>A.4.1.3. Are the geographic reference and the means of identification transparent and clear? Is GPS data provided?</p>	/01/	Depends on the closure CAR 3 in section A.4.1.2. above.	Refer CAR 3	OK
<p>A.4.1.4. How it is ensured and/or demonstrated, that the project proponents can implement the project (ownership, licenses, contracts etc.)?</p>	/01/	Depends on the closure of CAR 1 in section A.1.1 above.	Refer CAR 1	OK
<p>A.4.2. Duration of the CPA: Description of a typical CDM programme activity (CPA)</p>				
<p>A.4.2.1. Is the starting date of the CPA provided?</p>	/01/	<p>Yes, as stated in Section A.4.2.1. of the Specific CPA-DD, the starting date is 23/09/2011. But the starting date of CPA is before the date of global stakeholder consultation process. Hence a CAR is raised.</p> <p>CAR 4: The starting date of CPA is before the date of upload for GSP, and this seriously affects the eligibility criterion of the PoA. The PP shall explain the reasons for the same.</p>	CAR 4	OK
<p>A.4.2.2. Is the starting date consistent with the PoA timeline and the requirements of the PoA procedures?</p>	/01/	Depends on the closure of CAR 4 in section A.4.2.1 above.	Refer CAR 4	OK
<p>A.4.2.3. Is the operational lifetime of the CPA clearly defined and plausible?</p>	/01/	<p>Yes, as stated in Section A.4.2.2. of the Specific CPA-DD is 30 years. The same was substantiated with the help of a scientific paper titled "A review of solar photovoltaic levelized cost of electricity" by K. Branker (et al.) published in "Renewable and sustainable energy reviews" in 2011.</p>	OK	OK
<p>A.4.3. Choice of the crediting period and related information:</p>				
<p>A.4.3.1. Is the starting date of the crediting period stated and plausible (in accordance with the</p>	/01/	<p>Yes, the starting date of the crediting period has been provided in Section A.4.3.1 as 01/07/2012. The same is not plausible. Hence CL is raised.</p>	CL 2	OK

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PoA procedures)?		CL 2: The PP should clarify the plausibility of the starting date of the crediting period as mentioned in section A.4.3.1 of the CPA-DD.		
A.4.3.2. Is it evident that fixed crediting period is chosen, what is the length of the crediting period?	/01/	As per Section A.4.3 it is evident that fixed crediting period has not been chosen instead renewable crediting period has been chosen and that the length of the first crediting period is 7 years.	OK	OK
A.4.4. Estimated amount of emission reductions over the crediting period:				
A.4.4.1. Estimated amount of emission reductions stated?	/01/	The estimated amount of emission reductions as stated in the CPA-DD, Section A.4.4 is 105,154 tCO ₂ e.	OK	OK
A.4.4.2. Is the estimated amount consistent with section B 5 of the CPA-DD?	/01/	Estimated amount of CERs under section A.4.4 is consistent with section B.5.2. of the Specific CPA-DD.	OK	OK
A.4.5. Public funding of the programme activity				
A.4.5.1. Is the information provided on public funding in compliance with the actual situation or planning?	/01/	Information provided on public funding at CPA level is not sufficient. Hence CL is raised. CL 3: Project participants needs to substantiate with evidences that project activity does not involve public funding and such funding does not result in a diversion of official development assistance, is separate from, and is not counted towards the financial obligations of those parties.	CL3	OK
A.4.5.2. Is all information provided consistent with the details given in remaining chapters of the CPA-DD (in particular annex 2)?	/01/	Depends on closure of CL 3 in section A.4.5.1 above.	Refer CL3	OK
A.4.6. Confirmation that the CPA is neither registered as an individual CDM project activity or is part of another registered PoA				
A.4.6.1. Confirmation provided by coordinating/managing entity or CPA implementer?	/01/	The CME confirms in Section A.4.7. of the CPA-DD that the small-scale CPA is neither registered as an individual CDM project activity nor is it part of another registered PoA. However the same is required to be substantiated with supporting evidence. Hence a CL has been raised. CL 4:	CL4	OK

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		It has to be substantiated with appropriate evidence that “Small-scale solar electrical programme, South Africa-CPA001” is not registered as an individual CDM project activity nor is it part of another registered PoA.		
A.4.6.2. Is the CPA implementer undertaking another similar project activity in the same region? If yes, are the project activities uniquely identified and not overlapping with this CPA?	/01/	As per the UNFCCC-website, it has been concluded that the CME has been involved with the development of another micro-scale Solar energy PoA in the same host country. However it has not been clearly indicated in the CPA-DD that both these undertakings can be uniquely identified in order to avoid double counting. Hence a CL has been raised. CL 5: Further clarification should be provided on how both the PoAs and CPAs to be included can be uniquely identified in order to ensure no overlapping of the CPAs and avoid double accounting.	CL-5	OK
B. ELIGIBILITY OF THE CPA AND ESTIMATION OF EMISSION REDUCTIONS:				
B.1. Title and reference of the registered PoA to which CPA is added:				
B.1.1. Are the title and reference correctly provided?	/01/	The title of and reference to the PoA to which the small-scale CPA is added has been correctly provided as “Small-scale solar electrical programme, South Africa”.	OK	OK
B.2. Justification of why CPA is eligible to be included in the registered PoA:				
B.2.1. Does the CPA meet all the eligibility criteria as stipulated under section A.4.2.2 of the SSC-CDM-PoA-DD?	/01/	Depends on the closure of CL 2 in section A.4.2.10 of the PoA-DD.	Refer CL 2 of PoA-DD.	OK
B.2.2. Is the geographical boundary of the CPA including any time-induced boundary consistent with the geographical boundary set in the PoA?	/01/	Yes, as stated in B.2. of the Specific CPA-DD, the CPA is located within the KwaZulu-Natal province of Republic of South Africa, which is within the geographical boundary of the PoA. However depends on the closure of CAR 3 in section A.4.1.2 above.	Refer CAR 3	OK
B.2.3. Is unique identifications of CPA project location (e.g. product and end-user.) clearly and transparently provided to avoid double counting of emission reductions?	/01/	Depends on the closure of CL 5 in section A.4.6.2 above.	Refer CL 5	OK

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<p>B.2.4. Is specification of technology/measure including the level and type of service, performance specifications including compliance with testing/certifications are in line with the CDM-POA-DD?</p>	/01/	<p>Yes, it has been clearly mentioned in section B.2 of CPA-DD that each independent activity to be included into the proposed CPA uses solar electrical technologies, which enable to convert solar radiation into electrical energy.</p>	OK	OK
<p>B.2.5. Is the start date of the CPA clearly evidenced?</p>	/01/	<p>Depends on the closure of CAR 4 in section A.4.2.1 above.</p>	Refer CAR 4	OK
<p>B.2.6. Is it ensured that the CPA complies with applicability and other requirements of single or multiple methodologies?</p>	/01/	<p>Yes, the CPA complies with the applicability requirements of both AMS-I.D & I.F., as:</p> <ul style="list-style-type: none"> • The maximum size of proposed CPA is limited to 15 MW. • Each independent activity to be included in CPA uses solar electrical technologies to produce electricity and envisage either a new installation or a capacity addition 	OK	OK
<p>B.2.7. Is it ensured that CPAs meet the requirements pertaining to the demonstration of additionality as specified in PoA-DD?</p>	/01/	<p>As the subject CPA involves installation of solar PV technologies (for captive use by individual users who are grid connected), which do not require demonstration of additionality and are automatically additional as per § 2 and § 2(a) of Annex 28 of EB 67.</p> <p>The same was substantiated through:</p> <ul style="list-style-type: none"> • Technical specifications provided from the seller of solar electrical systems (Solar Total) for the solar PV module /06/. • Fully filled and duly signed copy of Table 6 of the CME Management System for the PoA /09/. • Equipment purchase order /11/. • Electricity bill of the individual project owner /25/. <p>Every CPA under this PoA involves installation of solar electrical technology and is deemed additional. Hence CPA is additional.</p>	OK	OK
<p>B.2.8. The PoA-specific requirements stipulated by the CME including any conditions related to undertaking local stakeholder consultations and environmental impact analysis;</p>	/01/	<p>There are no conditions / specific requirements stipulated by the CME including any conditions related to undertaking local stakeholder consultations and environmental impact analysis.</p>	OK	OK

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		The local stakeholder consultation and EIA have been carried out at PoA level.		
B.2.9. Does CPA provides an affirmation that funding from Annex I parties, if any, does not result in a diversion of official development assistance?	/01/	Depends on the closure of: <ul style="list-style-type: none"> CL 2 in section A.4.2.10 of the PoA-DD protocol CL 3 in section A.4.5.1 of CPA-DD protocol 	Refer CL 2 of PoA-DD & CL 3 of CPA-DD	OK
B.2.10. Are the target group (e.g. domestic/commercial/industrial, rural/urban, grid- connected/off-grid) and distribution mechanisms (e.g. direct installation) well defined and documented in the CPA?	/01/	Yes, the target groups have been clearly identified. Electricity which will be produced under the CPA is supplied to: <ul style="list-style-type: none"> An identified consumer (end user) or the group of consumers, which would have been supplied with electricity from the national grid of the RSA in the absence of the activity. Furthermore, excess electricity may be supplied to the grid; or The national grid of the Republic of South Africa. 	OK	OK
B.2.11. Where applicable, the conditions related to sampling requirements for a PoA in accordance with the approved guidelines/standard from the Board pertaining to sampling and surveys are applied?	/01/	Depends on the closure of CL 2 in section A.4.2.10 of the PoA-DD protocol	Refer CL 2 of PoA-DD	OK
B.2.12. The conditions that ensure that every CPA in aggregate meets the small-scale or micro-scale threshold criteria and remains within those thresholds throughout the crediting period of the CPA;	/01/	Yes, the CPA-DD clearly states, “the size of proposed CPA is limited to 15 MW of installed capacity.”	OK	OK
B.2.13. Where applicable, the requirements for the de-bundling check, in case CPAs belong to small-scale (SSC) or micro-scale project categories are fulfilled?	/01/	In case of the proposed CPA the de-bundling check is performed in accordance with § 10 of Guidelines on assessment of de-bundling for SSC project activities” (Version 03), reported as Annex 13 to the EB 54. In accordance with the same, CPA-DD in section A.2 clearly states that project activity involves installation of independent activities each of which is has a maximum installed capacity of 0.15 MW. The same is not larger than 1% of the small-scale thresholds defined by the	CL 6	OK

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		<p>methodology applied and hence the CPA does not require performing de-bundling check.</p> <p>CL 6: The PP needs to provide documentary evidence to substantiate that the installed capacity of each independent activity in the CPA is not larger than 1% of the small-scale thresholds defined by the methodology applied.</p>			
B.3. Assessment and demonstration of additionality of the CPA, as per eligibility criteria listed in the registered PoA:					
B.3.1.	Are the key criteria and data for assessing additionality of a CPA that are included appropriately?	/01/	<p>As the subject CPA involves installation of solar PV technologies (for captive use by individual users who are grid connected), which do not require demonstration of additionality and are automatically additional as per § 2 and § 2(a) of Annex 28 of EB 67.</p> <p>The same was substantiated through:</p> <ul style="list-style-type: none"> • Technical specifications provided from the seller of solar electrical systems (Solar Total) for the solar PV module /06/. • Fully filled and duly signed copy of Table 6 of the CME Management System for the PoA /09/. • Equipment purchase order /11/. • Electricity bill of the individual project owner /25/. <p>Every CPA under this PoA involves installation of solar electrical technology and is deemed additional.</p> <p>Hence the CPA is additional.</p>	OK	OK
B.4. Description of the sources and gases included in the project boundary and proof that the CPA is located within the geographical boundary of the registered PoA					
B.4.1.	Does the CPA boundary include the physical and geographical location where the programme activities take place?	/01/	<p>Yes, as stated in B.2. of the Specific CPA-DD, the CPA is located within the KwaZulu-Natal province of Republic of South Africa, which is within the geographical boundary of the PoA.</p> <p>However depends on the closure of CAR 3 in section A.4.1.2 above.</p>	Refer CAR 3	OK

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B.4.2.	Is there any proof that the CPA is located within the geographical boundary of the registered PoA?	/01/	However depends on the closure of CAR 3 in section A.4.1.2 above.	Refer CAR-3	OK
B.4.3.	Are all sources and gases within the boundary considered in a clear manner?	/01/	Yes, the sources and gases within the boundary have been considered in a clear manner and in accordance with the applied methodology i.e. AMS-I.F. (Version 02).	OK	OK
B.4.4.	Does the spatial and technological boundaries as verified on-site comply with the discussion provided by / indication included to the PoA-DD or CPA-DD?	/01/	Yes, the spatial and technological boundaries as verified on-site comply with the discussion provided in the PoA-DD or CPA-DD.	OK	OK
B.5. Emission reductions:					
B.5.1. Data and parameters that are available at validation (B.5.1.):					
B.5.1.1.	Are the equations, including fixed parametric values, to be used for calculation of emission reductions of a CDM-CPA, completely presented?	/01/	CPA-DD does not appropriately provide a complete list of ex-ante parameters fixed at validation. Hence CAR is raised. CAR 5: In the section B.5.1 of the CPA-DD, the list of data and parameters available at the time of validation is not complete and not in accordance with the requirements of the applied methodology AMS-I.F. (version 02).	CAR-5	OK
B.5.1.2.	Is the list of parameters presented in chapter B.5.1 considered to be complete with regard to the requirements of the applied methodology?	/01/	Depends on the closure of CAR 5 in section B.5.1.1 above	Refer CAR-5	OK
B.5.2. Ex-ante calculation of emission reductions (B.5.2.):					
B.5.2.1.	Are the GHG calculations documented in a complete and transparent manner?	/01/	In section B.5.2 of the CPA-DD, equations have been provided but relevant calculations are not documented. Hence CAR is raised. CAR 6: GHG calculations are not documented in a complete and transparent manner in B.5.2 of the Specific CPA-DD.	CAR-6	OK
B.5.2.2.	Is the data provided in this section consistent with data as presented in other chapters of the PoA-DD or CPA-DD?	/01/	Depends on the closure of CAR 6 in section B.5.2.1 above	Refer CAR-6	OK

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B.5.3. Summary of the ex-ante estimation of emission reductions (B 5.3)				
B.5.3.1. Will the programme activity result in lesser GHG emissions than the baseline scenario?	/01/	Yes, being a solar energy project where emission from the project is considered to be zero proves the same over the baseline, which is carbon intensive.	OK	OK
B.5.3.2. Is the form/table required for the indication of projected emission reductions correctly applied?	/01/	Yes, the template is correctly applied for the projected emission reduction for both the Specific CPA-DD and the CPA-DD.	OK	OK
B.5.3.3. Do these values comply with small-scale criteria for every year?	/01/	As the project activity is a type (i)-project, hence with a maximum installed capacity of 15 MW, this checklist-question is not applicable.	NA	OK
B.5.3.4. Is the projection in line with the envisioned time schedule for the programme's implementation and the indicated crediting period?	/01/	Yes, the projection is in line with the envisioned time schedule for the programme's implementation and the indicated crediting period, as indicated in the Specific CPA-DD.	OK	OK
B.5.3.5. Is the data provided in this section in consistency with data as presented in other chapters of the PoA- or CPA-DD?	/01/	Yes, the data provided in this section is consistent with data as presented in other chapters of the PoA-DD or CPA-DD.	OK	OK
B.6. Application of the monitoring methodology and description of the monitoring plan				
B.6.1. Description of the monitoring plan for the CDM-CPA				
B.6.1.1. Is the operational and management structure clearly described and in compliance with the envisioned situation?	/01/	Depends on the closure of CL 10 in section E.7.2.1 of PoA-DD protocol above.	Refer CL 10 of PoA-DD.	OK
B.6.1.2. Are responsibilities and institutional arrangements for data collection and archiving clearly provided?	/01/ /	Depends on the closure of CL 10 in section E.7.2.1 of PoA-DD protocol above.	Refer CL 10 of PoA-DD.	OK
B.6.1.3. Does the monitoring plan provide current good monitoring practice?	/01/	Depends on the closure of CL 10 in section E.7.2.1 of PoA-DD protocol above.	Refer CL 10 of PoA-DD.	OK
B.6.1.4. If applicable: Does annex 4 provide useful information enabling a better understanding of the envisioned monitoring provisions?	/01/	NA	OK	OK
B.6.1.5. Is the list of parameters presented in chapter B.6.1 considered to be complete	/01/	The list of parameters to be monitored by the CPA as presented in Section B.6.1. of the Specific CPA-DD has been considered to be complete.	OK	OK

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with regard to the requirements of the applied methodology?					
C. ENVIRONMENTAL ANALYSIS					
C.1. Indication of the level at which environmental analysis as per requirements of the CDM modalities and procedures is undertaken. Justification of choice of level at which the environmental analysis is undertaken:					
C.1.1.	Is it defined whether the environmental analysis takes place at PoA or CPA level?	/01/	Yes, it has been defined that the Environmental Analysis takes place at CPA level.	OK	OK
C.1.2.	Is the choice whether the environmental analysis takes place at CPA level justified?	/01/	Yes, the choice to conducting environmental analysis at CPA level is justified in CPA-DD. The environmental impact of the solar electrical systems depends on the particular location, size, how the system is embedded in its environment as well as its uptake in the local community	OK	OK
C.2. Documentation on the analysis of the environmental impacts, including trans-boundary impacts					
C.2.1.	Have negative environmental impacts associated with the project activity been identified?	/01/	No, negative environmental impacts due to the project activity has been identified. The CPA involves installation of solar electric system for power generation and does not have any negative environmental impact.	OK	OK
C.2.2.	In case negative environmental impacts associated with the project activity have been identified, have these found to be significant and if so, which mitigation actions have been introduced in order to reduce the negative impacts?	/01/	No, negative environmental impacts due to the project activity has been identified. The CPA involves installation of solar electric system for power generation and does not have any negative environmental impact.	Ok	OK
C.3. Please state whether in accordance with the host party laws/regulations, an environmental impact assessment is required for a typical CPA level, included in the PoA.					
C.3.1.	Is an Environmental Impact Assessment required, according to applicable laws/regulations of the (expected) Host Country/ies?	/01/	No, as per South Africa's National Environmental Management Act, 1998 no EIA is required for the proposed CPA.	OK	OK
D. STAKEHOLDERS' COMMENTS					
D.1. Please indicate the level at which local stakeholder comments are invited. Justify the choice:					
D.1.1.	Is there a clear statement whether the	/01/	Yes, it has been defined that the stakeholder comments	OK	OK

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	stakeholder comments were invited at PoA or CPA level?		were invited at PoA level.		
D.1.2.	Have the stakeholders been briefed on the intention to register the project as a CDM project activity?	/01/	Not applicable, as the stakeholder comments were invited at PoA level.	OK	OK
E. ANNEXES 1 – 4					
E.1. Annex 1: Contact Information					
E.1.1.	Is the information provided consistent with the one given under section A.3?	/01/	Yes, the information provided in Annex 1 of the CPA-DD is consistent with the information provided in Section A.3.	OK	OK
E.1.2.	Is the information on all private participants and directly involved Parties presented?	/01/	Yes, information has been presented.	OK	OK
E.2. Annex 2: Information regarding public funding					
E.2.1.	Is the information provided on the inclusion of public funding (if any) in consistency with the actual situation presented by the project participants?	/01/	Depends on the closure of CL 3 in section A.4.5.1 above	Refer CL 3	OK
E.2.2.	If necessary: Is an affirmation available that any such funding from Annex-I- countries does not result in a diversion of ODA?	/01/	Depends on the closure of CL 3 in section A.4.5.1 above	Refer CL 3	OK
E.3. Annex 3: Baseline information					
E.3.1.	If additional background information on baseline data is provided: Is this information consistent with data presented by other sections of the PoA- or CPA-DD?	/01/	No, additional background information on baseline data is provided.	OK	OK
E.3.2.	Is the data provided verifiable? Has sufficient evidence been provided to the validation team?	/01/	Not applicable.	OK	OK
E.3.3.	Does the additional information substantiate / support statements given in other sections of the PoA- or CPA-DD?	/01/	Not applicable.	OK	OK

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E.4. Annex 4: Monitoring information					
E.4.1.	If additional background information on monitoring is provided: Is this information consistent with data presented in other sections of the PoA- or CPA-DD?	/01/	No additional background information on monitoring has been provided.	OK	OK
E.4.2.	Is the information provided verifiable? Has sufficient evidence been provided to the validation team?	/01/	Not applicable.	OK	OK
E.4.3.	Do the additional information and / or documented procedures substantiate / support statements given in other sections of the PoA- or CPA-DD?	/01/	Not applicable.	OK	OK

Table 2: Resolution of Corrective Action and Clarification Requests

Clarifications and corrective action re-quests by validation team	Ref. to table 1	Summary of programme activity implementer's response	Validation team Conclusion
CORRECTIVE ACTION REQUESTS			
CAR 1: Letter of Approval (LoA) from the Host Country (Republic of South Africa) has not been provided to DOE for Validation.	A.1.1. / A.3.2. / A.4.1.4. / A.4.2.2. /	The Letter of Approval (LoA) was received on 08/05/2012. LoA was submitted to the DOE.	The Letter of Approval (LoA) dated 08/05/2012 from DNA of republic of South Africa was submitted to DoE. Hence CAR is closed.
CAR 2: Description of CPA under section A.2 of the Specific CPA-DD does not provide information on: <ul style="list-style-type: none"> How the CPA reduces GHG emissions Implementation schedule for the CPA 	A.2.1. / A.2.2. / A.2.4. / A.2.5. / A.2.6. /	This information has been added in section A.2 as follows: <i>GHG emissions from the electricity generation for the solar electrical systems amount to zero. The reduction of GHG emissions as a result of the implementation of this CPA will be achieved due to reduction of CO₂ emissions from combustion of fossil fuel at the existing grid-connected power plants and plants which would likely be built in the absence of this CPA.</i> <i>Since actual independent activities may not be known</i>	Section A.2 of the revised CPA-DD has been modified and provides following information: <ul style="list-style-type: none"> The CPA involves installation of solar electric systems, which uses renewable source of energy to generate electricity. The PoA leads to reduction of GHG emission

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		<p><i>before the registration of the CPA under the PoA, the activities will be added ex post during the crediting period of the corresponding CPA, therefore the start date of this CPA will be later than the date of publishing of the PoA for global stakeholder consultation, namely 23/12/2011; with the expected date of the inclusion of the proposed CPA under the PoA being used as the start of the crediting period, namely 01/01/2013.</i></p> <p><i>It is envisaged that 3MW of activities will be added each year until a maximum of 15MW, as shown in the table below.</i></p> <p>A Table was also inserted.</p>	<p>by displacement of fossil fuel intensive grid.</p> <ul style="list-style-type: none"> The CPA involves a phase wise installation of around 3 MW of solar electrical systems until a maximum capacity of 15 MW is achieved. The same has been represented in a tabular fashion. <p>Hence CAR is closed.</p>
CAR 3: Information allowing for unique identification of the CPA is not has not been provided.	A.4.1.2. / A.4.1.3. / B.2.2. / B.4.1. / B.4.2. /	<p>This information has been added in section A.4.1: CPA-001 under the South African Small-Scale Solar Electrical Programme</p> <p>And a characteristic table was inserted</p>	<p>Section A.4.1 of the revised CPA-DD provides information for unique identification of the CPA.</p> <p>Hence CAR is closed.</p>
CAR 4: The starting date of CPA is before the date of upload for GSP, and this seriously affects the eligibility criterion of the PoA. The PP shall explain the reasons for the same.	A.4.2.1. / A.4.2.2. / B.2.5. /	<p>The date has been changed to the 01/08/2012, which is the date of signing of equipment purchase order between supplier of solar electrical system (Solar Total) and the owner of the activity.</p> <p>The reason that the date has been changed is due to the fact that the initial version of the PoA-DD was published for global stakeholder consultation on 23 September 2011, with the title of the programme being “Microscale solar electrical programme, South Africa”.</p> <p>From the 25th till the 29th September 2011, the 63 meeting of the CDM EB took place where the “Standard for application of multiple CDM methodologies for a programme of activities” was adopted. During the site visit held on 03 November 2011 it became clear that the methodology AMS-I.D. “Grid connected renewable electricity generation” can also be applied to the PoA. Therefore BWC decided to redesign the programme</p>	<p>The DoE crosschecked the reason provided from the UNFCCC website and confirms that the reason provided is appropriate.</p> <p>The starting date of CPA has been changed to 01/08/2012, which is the date of signing of equipment purchase order between supplier of solar electrical system (Solar Total) and the owner of the activity.</p> <p>The same is found to be satisfactory.</p> <p>Hence CAR is closed.</p>

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		based on the combination of small-scale methodologies AMS-I.D. and AMS-I.F, and at the same time also change its title to “Small-scale solar electrical programme, South Africa”. Therefore the new version is dated the 15 th December 2011 and that should be the date of upload for GSP.	
CAR 5: In the section B.5.1 of the CPA-DD, the list of data and parameters available at the time of validation is not complete and not in accordance with the requirements of the applied methodology AMS-I.F. (version 02).	B.5.1.1. / B.5.1.2. /	Outstanding parameter have been added to section B.5.1 of the CPA-DD as well as in section E.6.3 of the PoA-DD	Section B.5.1 of the revised CPA-DD has been modified and now contains a complete list of data and parameters fixed ex-ante in accordance with the applied methodology AMS-I.F. (version 02). Hence CAR is closed.
CAR 6: GHG calculations are not documented in a complete and transparent manner in B.5.2 of the Specific CPA-DD.	B.5.2.1. / B.5.2.2. /	A sample calculation has been added to section B.5.2 and subsequently the emission reductions have been revised.	As the CPA involves phase wise implementation of solar electrical systems, a sample calculation of emission reductions due to the CPA has been provided in the section B.5.2 of the CPA-DD and emission reduction calculations have been revised. Hence CAR is closed.
CLARIFICATION REQUEST			
CL 1: The description of the small-scale CPA in Section A.2 of the Specific CPA-DD does not allow the reader to establish clearly whether the project activity involves a greenfield-site or capacity additions or a mix of both.	A.2.1. /	In section A.2 there's a paragraph clarifying this by stating: <i>Each independent activity under the proposed CPA envisages:</i> <ul style="list-style-type: none"> • <i>Installation of a solar electrical system at the site where there was no solar electrical system operating prior to the implementation of the activity; or</i> 	The section A.2 of revised CPA-DD clearly states that the each activity under the CPA involves installation of solar electrical systems at greenfield site. Hence CL is closed.

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		In the generic CPA the following was also added: <i>Provide a brief description of the CPA and activities under it, how the CPA reduces GHG emissions, implementation schedule for the CPA as well as specify whether project activities involve Greenfield sites or capacity addition]</i>	
CL 2: The PP should clarify the plausibility of the starting date of the crediting period as mentioned in section A.4.3.1 of the CPA-DD.	A.4.3.1. /	The date has been changed to 01/01/2013 in section A.4.3.1.	In section A.4.3.1 of the revised CPA-DD the start of the crediting period has been changed to 01/01/2013 (the expected date of the inclusion of the proposed CPA under the PoA) or the date of registration whichever is later. Hence CL is closed.
CL 3: Project participants needs to substantiate with evidences that project activity does not involve public funding and such funding does not result in a diversion of official development assistance, is separate from, and is not counted towards the financial obligations of those parties.	A.4.5.1. / A.4.5.2. / B.2.9. / E.2.1. / E.2.2. /	Added the following to section a.4.5: <i>No official Development Aid is involved or diverted as a result of the project activity/activities under the CPA.</i> <i>The official declaration of 'no development aid' has been provided by the solar electrical system developers/owners.</i>	In the section A.4.5 of the revised CPA-DD it is clearly stated that no ODA is involved or has been diverted as a result of activity/activities under the CPA. The same has been substantiated through a declaration signed by the supplier of solar electrical systems and the owner of the system. Hence CL is closed.
CL 4: It has to be substantiated with appropriate evidence that "Small-scale solar electrical programme, South Africa-CPA001" is not registered as an individual CDM project activity nor is it part of another registered PoA.	A.4.6.1. /	A signed declaration by the supplier of solar electrical systems and the owner of the system as well as Table 6 of 'The Management System for the South African Small-Scale Solar Electrical Programme', which was submitted to the DOE which clearly states "Small-scale solar electrical programme, South Africa-CPA001" is not registered as an individual CDM project activity nor is it part of another registered PoA.	The same has been substantiated through a signed declaration by the supplier of solar electrical systems and the owner of the system as well as Table 6 of 'The Management System for the South African Small-Scale Solar Electrical Programme.'

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			Hence CL is closed.
CL 5: Further clarification should be provided on how both the PoAs and CPAs to be included can be uniquely identified in order to ensure no overlapping of the CPAs and avoid double accounting.	A.4.6.2. / B.2.3. /	<p>The required information has been added to section A.4.4.1 of the PoA-DD under the section</p> <p><i>i. "A system/procedure to avoid double accounting e.g. to avoid the case of including a new CPA that has been already registered either as a CDM project activity or as a CPA of another PoA,"</i></p> <p>as well as section 4 and 5 in 'The Management System for the South African Small-Scale Solar Electrical Programme'. Which was submitted to the DOE. And also eligibility criteria 2 on the CPA-DD.</p> <p>A letter to Carbon Check requesting the "Microscale solar electrical programme, South Africa" to be removed from the UNFCCC website has been submitted to the DOE. Therefore the CME will not be involved with the development of another micro-scale Solar energy PoA in the same host country.</p>	<p>The CME vide a letter /24/ (dated 25/10/2012) has requested the DoE to withdraw the Microscale solar electrical programme, South Africa" from UNFCCC website.</p> <p>Furthermore, the procedures to uniquely identify the activities within the CPA and the CPA on a whole has been added in the CME management system and also incorporated as an eligibility criterion in the PoA-DD.</p> <p>Hence CL is closed.</p>
CL 6: The PP needs to provide documentary evidence to substantiate that the installed capacity of each independent activity in the CPA is not larger than 1% of the small-scale thresholds defined by the methodology applied.	B.2.13. /	<p>The required information has been added to section A.4.4.1 in the form of 'The Management System for the South African Small-Scale Solar Electrical Programme'. Which was submitted to the DOE.</p>	<p>The same has been substantiated through the equipment purchase contract and technical specifications of the solar PV modules provided by the seller of the solar electrical system as well as Table 6 of 'The Management System for the South African Small-Scale Solar Electrical Programme.'</p> <p>Hence CL is closed.</p>

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Table3: Forward Action Requests

Forward action request	Reference to Table 2	Response by project participants Validation Conclusion
	-	-

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APPENDIX B

CERTIFICATE OF COMPETENCE

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Vikash Kumar Singh

is hereby certified as a

Qualified CDM Technical Reviewer

with Carbon Check (Pty) Ltd, under the regulations of the UNFCCC and Carbon Check's qualification criteria, in the following Technical Area/s:

1.2, 3.1, 13.1

Awarded: 11 October 2012



Chief Executive Officer
Mr Adam Simcock