

# VALIDATION REPORT

## **Blue World Carbon Asset Management (Pty) Ltd**

Title of PoA:

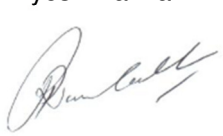
**South African Large Scale Grid Connected Solar Park  
Programme”**

Report No.CCL0026/SAGCSP/02042012

Revision No. 2

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

<b>PoA Title:</b> South African Large Scale Grid Connected Solar Park Programme		<b>Estimated CERs (tCO<sub>2</sub>e/Year of the 1<sup>st</sup> CPA):</b> 65,597 <b>Country:</b> Republic of South Africa	
<b>GHG reducing measure/technology of the CPAs of the PoA:</b>		The emission reduction would happen by displacing the fossil fuel dominated grid electricity equivalent to the net electricity supplied by the Solar power plant i.e. the CPAs of the PoA to the RSA grid {measure for the CPAs utilising ACM0002} Each large scale CPA of the programme involves implementation of Solar power plants and supplying electricity to the grid.	
<b>Client/CME:</b> Blue World Carbon Asset Management (Pty) Ltd		<b>Client contact:</b> Mr. Joost Van Lier Suite 101, Block A, 7 West Quay Road, V&A, Marina, Cape Town, 8001, South Africa Telephone: +27 (0)71 609 2276 e-mail: <a href="mailto:joost.van.lier@blueworldcarbon.com">joost.van.lier@blueworldcarbon.com</a>	
<b>Report No.:</b> CCL0026/SAGCSP/02042012	<b>Revision:</b> 02	<b>Date of this report:</b> 21/12/2012	
<b>Technical Reviewer:</b> Vikash Kumar Singh		<b>Date of approval:</b> 26/12/2012	
<b>Approved by (Final Report):</b> Priyesh Ramlall 		<b>Date of approval:</b> 27/12/2012	
<b>Organisational Unit: Carbon Check (Pty) Ltd</b>			
<b>Report Distribution:</b> <input type="checkbox"/> Unrestricted Distribution <input type="checkbox"/> Limited Distribution <input checked="" type="checkbox"/> No Distribution (without permission from the Client or responsible organisational unit)			
<b>Organisational unit: Carbon Check (Pty) Ltd</b>			
<b>GPS coordinates of the geographical boundary of PoA::</b>		The verified /B07-7/ range of geographic coordinates of RSA: Latitude: 22°S to 35°S Longitude: 16°E to 33°E	
<b>Methodology</b>			
<b>Number:</b> ACM0002	<b>Title:</b> Consolidated baseline methodology for grid – connected electricity generation from renewable sources.	<b>Scale:</b>	<b>Scope:</b> 1
<b>Version:</b> 12.3.0		Small <input type="checkbox"/> Large <input checked="" type="checkbox"/>	<b>TA: 1.2</b>
Carbon Check Pty Ltd, (CCL) is commissioned by Blue World Carbon Asset Management (Pty) Ltd (the CME) to perform the validation of the Program of activities “South African Large Scale Grid Connected Solar Park Programme” Solar with regard to the relevant requirements for CDM programme of activities.			
<b>Summary of the PoA Validation and Opinion:</b>			
<input checked="" type="checkbox"/> The review of the project design documentation and the subsequent follow-up interviews have provided CCL with sufficient evidence for the determination of the PoA’s fulfillment of all stated criteria. In our opinion, the PoA meets all relevant UNFCCC requirements for the CDM. Therefore, CCL recommends the PoA for registration by the CDM Executive Board.			
<input type="checkbox"/> The reviews of the project design documentation and the subsequent follow-up interviews have not provided CCL with sufficient evidence for the determination of the PoA’s fulfillment of all stated criteria. Therefore, CCL will not recommend the PoA for registration by the CDM Executive Board and will			

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

inform the project participants and the CDM Executive Board of this decision.

Validation Team		Role					
Full Name	Appointed for Sectoral scopes (Technical Areas)	Team Leader	Trainee Auditor	Local Assessor	Team Member (Auditor)	Technical Expert	Technical Reviewer
Pankaj Kumar	1.1,1.2, 3.1, 4.5, 13.1	x				x	
Ravi Shankar	1.2,2.1, 2.2, 3.1, 13.1				x	x	
Adam Simcock	--			x			
Barun Kumar			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

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

## Executive Summary – Validation Opinion

The validation team of Carbon Check (Pty) Ltd performed the validation of the PoA titled “South African Large Scale Grid Connected Solar Park Programme”.

Standard auditing techniques have been used for the validation of the PoA. An analysis, as provided by the applied methodology ACM0002 (version 12.3.0), demonstrates that the proposed PoA is not a likely baseline scenario. Emission reductions attributable to the PoA (eligible CPAs of the PoA) are assessed to be additional to any that would occur in the absence of the proposed eligible CPAs. Given that the PoA is implemented as designed, the CPAs are likely to achieve the emission reductions.

The validation is based on the information made available to Carbon Check (Pty) Ltd, as well as the engagement conditions detailed in this report. Based on the review of PoA-DD followed by site visit and assessment of supporting evidences validation team concludes that the requirement of paragraph 37 of CDM Modalities and Procedure have been made. The validation has been performed following the VVM requirements.

The validation was executed in the following steps:

- Receipt of PoA-DD (version 1.0, dated 02/04/2012) CPA DD (generic) and specific CPA-DD (version 1.0, dated 02/04/2012) for global stakeholder comments.
- Global stakeholder comment process (05/04/ 2012 – 04/05/ 2012)
- On-site visit with stakeholder interviews (24/08/2012 – 25/08/2012)
- 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 ACM0002 (version 12.3.0).
- Review of responses for CARs/CLs
- Issue of the final validation report and protocol

During the course of validation a total of 13 Corrective Action Requests (CARs) and 06 Clarification Requests (CLs) were identified on webhosted PoA-DD /01/ and gCPA-DD/02/. Upon evaluation of responses provided by the Project Participants, all the identified issues were closed successfully.

The single purpose of this report is its use during the registration process as part of the CDM project cycle. In the opinion of Carbon Check (Pty) Ltd, the PoA meets all relevant UNFCCC requirements for the CDM if the underlying assumptions do not change. Carbon Check (Pty) Ltd thus recommends the PoA to be registered with the UNFCCC.

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

## Abbreviations

BE	Baseline Emissions
BM	Build Margin
BWC	Blue World Carbon Asset Management (Pty) Ltd
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
CM	Combined Margin
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> e	Carbon dioxide equivalent
CME	Coordinating/managing entity and participants of PoA
CPA	CDM Programme Activity
CPA-DD	CDM Programme Activity design document
DEA	Department of Environmental Affairs
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
LA	Lead Auditor
LoA	Letter of Approval
MoV	Means of Validation/Verification
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-governmental Organization
OM	Operating Margin
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)
TA	Trainee Auditor
TL	Team Leader
TM	Team Member
TR	Technical Reviewer
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

<b>Table of Contents</b>	<b>Page</b>
1 INTRODUCTION .....	7
1.1 Objective	7
1.2 Scope	7
2 METHODOLOGY .....	7
2.1 Document Review	8
2.2 Follow-up actions	10
2.3 Resolution of outstanding issues	11
2.4 Internal quality control	12
2.5 Validation team and the technical reviewer(s)	12
3 VALIDATION FINDINGS	
3.1 Approval and Participation	13
3.2 Programme of Activities Design Document	14
3.3 Programme Description	14
3.4 Eligibility Criteria for CPA Inclusion	16
3.5 Operation and Management Plan	20
3.6 Monitoring Plan	21
3.7 Baseline and monitoring methodology	21
3.8 Additionality	24
3.9 Emission reduction from a typical CPA of the PoA	28
3.10 Monitoring Plan of a typical CPA	31
3.11 Environmental Impacts	33
3.12 Local stakeholders consultation	33
4. COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS.....	33

Appendix A: Validation Protocol

Appendix B: Competency Certificates of the Validation team members

# VALIDATION REPORT

CDM VALidATION report NO CCL0026/SAGCSP/02042012

## 1 INTRODUCTION

Blue World Carbon Asset Management (Pty) Ltd (BWC) (hereafter referred as “CME”) has commissioned the DOE Carbon Check (Pty) Ltd to perform validation of the proposed CDM Programme of Activities (PoA) "South African Large Scale Grid connected Solar Park Programme" in the Republic of South Africa (hereafter called “the PoA”). This report summarizes the findings of the validation of the PoA identified in the PoA Design Document (PoA-DD); the CDM Programme Activity Design Document (gCPA-DD) template with generic information relevant to all CDM Program Activities (CPAs) to be included in the PoA, and the associated real case CPA-DD. The validation was 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 procedures for registration of a programme of 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 purpose of a validation is to have an independent third party assess the PoA-DD, CPA-DD template and the associated real case CPA-DD (also known as specific CPADD). In particular, the eligibility criteria for inclusion and demonstration of additionality of CPAs, the programme’s baseline determination, monitoring plan, and the programme’s compliance with relevant UNFCCC and host Party criteria are validated in order to confirm that the programme design, as documented, is sound and reasonable and meets the identified criteria. Validation is a requirement for all CDM PoAs and is seen as necessary to provide assurance to stakeholders of the quality of the programme and its intended generation of certified emission reductions (CERs).

### 1.2 Scope

The validation scope is defined as an independent and objective review of the PoA-DD, CPA-DD template and the real case CPA-DD. The PoA-DD, CPA-DD template and the real case CPA-DD were reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures, the procedures for registration of a programme of activities as a single CDM project activity and the relevant decisions by the CDM Executive Board, including the approved baseline and monitoring methodology ACM0002 (version 12.3.0).

The validation team has, based on the requirements contained in the Validation and Verification Manual and the procedures for registration of a programme of activities as a single CDM project activity employed a rules-based approach, focusing on the identification of significant risks for programme implementation and the generation of CERs.

The validation is not meant to provide any consulting towards the PoA Managing Entity, CPA Implementer(s) and/or project participant(s) (PP). However, stated requests for clarifications, corrective actions, and/or forward actions may provide input for improvement of the programme design.

## 2 METHODOLOGY

The validation consists of the following four phases:

- I. Publication of the programme design documents (PoA-DD, CPA-DD template and specific CPA-DD) on UNFCCC website for global stakeholder consultation;
- II. A desk review of the PoA-DD, CPA-DD template and the associated real case CPA-DD;
- III. On-site visit and follow-up interviews with programme stakeholders; and
- IV. The resolution of outstanding issues and the issuance of the final validation report and opinion.

The following sections outline each step in more detail.

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

## 2.1 Document Review

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

REFEREN CE NO.	DOCUMENTS
/01/	POA-DD (webhosted version), for "South African Large Scale Grid Connected Solar Park Programme", Version 1.0, Date - 02/04/2012
/02/	CPA-DD template (webhosted version)
/03/	POA-DD for "South African Large Scale Grid Connected Solar Park Programme", Final Version 3.0, Date – 11/12/2012
/04/	Final generic CPA-DD template
/05/	Letter of Approval from the DNA of Republic of South Africa (dated 31/10/2012), authorizing Blue World Carbon Asset Management (Pty) Ltd as the project proponent and the coordinating and managing entity (CME) to participate in the CDM project.
/06/	Modalities of communication dated, 29/10/2012
/07/	The Management System of the CME for the South African Large Scale Grid Connected Solar ParkSolar (Version 02) dated 26/10/2012
/08/	Declaration from the CME on: 1. PoA is a voluntary action by CME and is not mandated by any law or regulations of republic of South Africa dated 23/02/2012 2. No ODA involved/diverted as a result of the PoA dated 30/03/2012
/09/	Agreement between BWC and Lylaserve (Proprietary) Ltd. for CDM Project Development and Services, dated 14/12/2012.
/10/	PoA database submitted by CME regarding record keeping of the CPAs to be included in the PoA. Dated April 2012.
/11/	Certificate of Incorporation of Blue World Carbon Asset Management (Registered Number 2009/02466/07), dated: 10/02/2009
/12/	Environmental Authorization, by DEA of RSA, dated 03/10/2011.
/13/	Grid Emission Factor (GEF) calculation spread sheet, dated: 12/12/2012
/14/	Relevant proof of LSC: 1. Stakeholder meeting invitation letter/Advertisement 2. Stakeholder database 3. Stakeholder minute of meeting/list of stakeholders who raise question
/15/	Contract between the CME and DOE for the validation.
/16/	Integrated Report ESKOM 2010, <a href="http://financialresults.co.za/2010/eskom_ar2010/downloads/eskom_ar2010.pdf">http://financialresults.co.za/2010/eskom_ar2010/downloads/eskom_ar2010.pdf</a>
/17/	South African Projects portfolio. Projects approved by South African DNA till 19 June 2012: <a href="http://www.energy.gov.za/files/esources/kyoto/2012/CDM%20Projects%20Portfolio%2019%20June%202012.pdf">http://www.energy.gov.za/files/esources/kyoto/2012/CDM Projects Portfolio 19 June %202012.pdf</a>
/18/	List of DNA, UNFCCC website. <a href="http://cdm.unfccc.int/DNA/bak/index.html">http://cdm.unfccc.int/DNA/bak/index.html</a>
/19/	Table 4, Activity Information Form, agreement between CPA implementer and CME regarding agreement on established management system by CME. Dated 19/12/2012
/20/	IRR calculation sheet template

Background documents/websites:

/B01/	CDM VALIDATION AND VERIFICATION MANUAL, VERSION 01.2, EB 55 (ANNEX 1)
/B02/	ACM0002-Consolidated baseline methodology for grid-connected electricity generation from renewable sources (Version 12.3.0).



# VALIDATION REPORT

CDM VALidATION report NO CCL0026/SAGCSP/02042012

/B03/	Tool to calculate the emission factor for an electricity system, version 3.0, EB 70 (Annex 22)
/B04/	<p>PoA Specific guidelines / standards published by UNFCCC:</p> <ol style="list-style-type: none"> <li>1. Programme of activities design document form (CDM-PoA-DD) Version 01</li> <li>2. CDM programme activity design document form (CDM-CPA-DD) Version 01</li> <li>3. 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)</li> <li>4. Procedures for review of erroneous inclusion of a CPA, version 03, EB 61 (Annex 22)</li> <li>5. Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities” (Version 02.1, EB 70, Annex 05</li> <li>6. 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)</li> <li>7. Tool for the demonstration and assessment of additionality, version 7.0, EB 70 (Annex 08)</li> <li>8. Procedures for processing and reporting on validation of CDM project activities, version 03, EB 50 (Annex 48)</li> <li>9. EB 47 report.</li> <li>10 Guidelines on the assessment of investment analysis, Version 05, EB 62 (Annex 5)</li> <li>11. Guidelines on the demonstration and assessment of prior consideration of the CDM, Version 04, EB 62 (Annex 13)</li> <li>12. Guidelines on common practice, version 02.0, EB 69 (Annex 8)</li> <li>13. Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel consumption, Ver. 02, EB 41, Annex 11</li> <li>14. Guidelines on additionality for first-of-its-kind activities, ver. 2.0, Annex 07, EB 69</li> </ol>
/B05/	Glossary of CDM terms, version 06, EB 66 (Annex 6)
/B06/	<p>Websites:</p> <ol style="list-style-type: none"> <li>1. <a href="http://www.unfccc.int">www.unfccc.int</a></li> <li>2. <a href="http://www.blueworldcarbon.com/">http://www.blueworldcarbon.com/</a></li> <li>3. <a href="http://en.wikipedia.org/wiki/Geography_of_South_Africa">http://en.wikipedia.org/wiki/Geography_of_South_Africa</a></li> </ol>
/B07/	<p>Website used for the validation of Grid Emission Factor:</p> <ol style="list-style-type: none"> <li>1. <a href="http://financialresults.co.za/2010/eskom_ar2010/downloads/eskom_ar2010.pdf">http://financialresults.co.za/2010/eskom_ar2010/downloads/eskom_ar2010.pdf</a></li> <li>2. <a href="http://www.eskom.co.za/content/2008EskomPoster.jpg">http://www.eskom.co.za/content/2008EskomPoster.jpg</a></li> <li>3. <a href="http://www.eskom.co.za/content/calculationTable.htm">http://www.eskom.co.za/content/calculationTable.htm</a></li> <li>4. <a href="http://www.financialresults.co.za/eskom_ar2009/ar_2009/downloads.htm">http://www.financialresults.co.za/eskom_ar2009/ar_2009/downloads.htm</a></li> <li>5. <a href="http://financialresults.co.za/2010/eskom_ar2010/index.htm">http://financialresults.co.za/2010/eskom_ar2010/index.htm</a></li> <li>6. <a href="http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf">http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf</a></li> <li>7. <a href="http://en.wikipedia.org/wiki/Geography_of_South_Africa">http://en.wikipedia.org/wiki/Geography_of_South_Africa</a></li> </ol>

The changes between the PoA-DD / 01/ version1.0 published for the 30 days stakeholder commenting period and the final version submitted for registration/03/ are addressed in the findings of validation process summarized in the subsequent sections as a part of this report.

The main changes between the PoA-DD /01/ version 1.0 published for the 30 days stakeholder commenting period and the final version/03/ submitted for registration are presented in the below table as follows:

TOPIC	POA-DD – GSC/01/	FINAL POA-DD/03/	ASSESSMENT
PoA title	“South African Large Scale Grid Connected Solar Park	“South African Large Scale Grid Connected Solar Park	No Change

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

	Programme "	Programme"	
Parties	Republic of South Africa (Host)	Republic of South Africa (Host)	No Change
Scope	1: Energy Industries (renewable / non-renewable sources)	1: Energy Industries (renewable / non-renewable sources)	No change
Methodology / Activity	ACM0002 version 12.2.0	ACM0002 Version 12.3.0	Minor version of the applied methodology is updated in the revised PoA DD /03/.
Amount of emission reductions (tCO <sub>2</sub> )	Quantification of ERs at PoA level is not required as per the PoA DD template.	Quantification of ERs at PoA level is not required as per the PoA DD template.	No change
PoA starting date	05/04/2012 (the expected date of publishing of the PoA for global stakeholders comment)	01/03/2013	Start date of PoA revised and more realistic date now provided.
PoA Location	Republic of South Africa	Republic of South Africa	No change

## 2.2 Follow-up actions

On 24/08/2012- 25/08/2012 Carbon Check visited the project proponent and technology provider, project implementation team and CDM Consultant of the Programme of Activities to resolve questions and issues identified during the document review and to perform interviews with relevant stakeholders in the Host Country.

The key personnel interviewed and the main topics of the interviews are summarized in the table below.

SL No.	Date	Name and Role	Organization	Topic
A	24/08/2012	Jaco Uyls (Project Manager)	Lylaserve (Pty) Ltd	Project concept and Design and monitoring. PoA-DD Discussion, Baseline, additionality, monitoring and emission reduction calculation, stakeholder consultation process etc.
B	24/08/2012	Ilya Goryashin, Project Manager	BWC	Discussion on Financial of the PoA . PoA DD development and CPA development in general.
C	25/08/2012	Tinus Mans	Property owner	Stakeholder's consultation.

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

# VALIDATION REPORT

CDM VALidATION report NO CCL0026/SAGCSP/02042012

## 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 PoA 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 CDM PoA 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 validation protocol consists of three tables. The different columns in these tables are described in the figure below. The completed validation protocol for the PoA 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.

## Validation Protocol

In order to ensure consideration of all relevant assessment criteria, a validation protocol is used. The protocol shows, in a transparent manner, criteria and requirements, means of validation and the results from pre-validating the identified criteria. The validation protocol reflects the generic CDM requirements as well as PoA and CPA specific issues which have to be met by the PoA and those to be included CPAs. The validation protocol serves the following purposes:

- It organises, details and clarifies the requirements that a PoA and those to be included CPAs are expected to meet;
- It ensures a transparent validation process where the validating entity will document how a particular requirement has been validated and the result of the determination.

The validation protocol as described in Figure 1.

**Figure 1: Validation protocol tables**

Validation Protocol, Table 1 - Requirement checklist					
Checklist Question	Ref.	MoV	Comments	Draft Conclusion	Final Conclusion

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

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 1	Response by project participants	Validation Conclusion
The CAR and/or CLs raised in table 1 are repeated here.	Reference to the checklist question number in Table 1 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.

## 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	Role/Qualification	Supervision of work	Desk review	Site visit & Interview	Report & protocol writing	Technical Area	Reporting support	Technical Reviewer
Mr Pankaj Kumar	TL / LA	X				1.2,1.1,3.1,4.5, 13.1		
Mr. Ravi Shankar	TM / LA			X	X	1.2, 2.1,2.2,3.1,13.1	X	
Mr Adam Simcock	Local Assessor						X	
Mr Barun Kumar	TM / TA		X				X	
Mr Vikash Kumar Singh	TR / TR					1.2, 3.1, 13.1		X

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

## 3.0 Validation findings

The findings of the validation are stated in the following sections. The validation criteria (requirements), the means of verification and the results from validating the identified criteria are documented in more detail in the validation protocol in Appendix A.

The final validation findings relate to the programme design as documented and described in the PoA-DD/01/ and g-CPA-DD/02/.

## 3.1 Approval and Participation

The below table summarizes the project participant and party involved. The validation team received letter of approval for Host party from the CME of the PoA/05/. This LoA is therefore regarded as valid and meeting the CDM requirements.

The Validation Team can confirm that the issued LoA from the host party refers to the precise proposed PoA title as stated in the PoA-DD/01/ and g-CPA-DD/02/. The Validation Team can confirm that the project participant i.e. the CME is listed in tabular form in section A.3 of the PoA-DD /03/ and this information is consistent with the contact details provided in Annex 1 of the PoA-DD /03/. The letter of approval is valid and authentic as verified from UNFCCC website that the DNA of the Republic of South Africa (issuing authority of LoA) is the listed party. The LoA is found to be unconditional with respect to paragraph 45 (a) to (d) of VVM, version 01.2 /B01/. And hence these letter(s) are in accordance with paragraphs 45 - 48 of VVM version 01.2. The LoA, was checked and found in compliance of CDM requirements including requirements of PoA vide § 8, 9 and 10 of annex 38, EB 55/B04-3/.

The below table summarizes the project participants and parties involved:

<b>PROJECT PARTICIPANT/CME</b>	BLUE WORLD CARBON ASSET MANAGEMENT (PTY) LTD
<b>Party Involved</b>	Republic of South Africa
<b>Approval</b>	
LoA Received/05/	Yes
Date of LoA/05/	31/10/2012
LoA received from	DNA of Republic of South Africa: Department of Energy
Approval Number	N/A
Validity of LoA	Valid
<b>Participation</b>	
Party is party to the Kyoto Protocol	Yes
Voluntary participation	Yes
Diversion of Official Development Assistance (ODA) towards host country	No
Project contribution to Sustainable Development	Yes

## Validation of ODA

The validation did not reveal any evidence that this PoA can be seen as a diversion of ODA. It is also confirmed by the interview with representative of CME, and through the declaration provided by CME/08/ about no ODA diversion from Annex-I party in the development of the PoA.

## Confirmation of Modalities of Communication (MoC)

# VALIDATION REPORT

CDM VALidATION report NO CCL0026/SAGCSP/02042012

The project Modalities of Communication (MoC)/06/ signed on 29/10/2012 was received from the CME. As required in Procedures for Modalities of Communication between Project Participants and the Executive Board, the Validation Team has verified the names of authorised signatories for future communication related to the corresponding scope of authority with UNFCCC from the Host country project participant. The Validation Team can confirm that the signatory and contact details on the MoC are authorized and credible. The MoC has been directly received from the CME.

## 3.2 Programme of Activities Design Document

The PoA-DD/03/ and the CPA-DD template/04/ are in compliance with relevant form/B04-1,2/ and guidances/B04/ as provided by UNFCCC. The most recent version of the forms is used. The validation team confirms that the guidelines for the completion of the PoA documents (as contained in the DD form itself) in their most recent version have been followed. The Managing entity and/or project participants in the applicable PoA sections provided the relevant information. The validation team further confirms the consistency between POA-DD /03/ and the PoA generic CPA-DD /04/ to be used for inclusion of a CPA in the registered PoA, this confirms to the requirement of § 15 (d) of EB 55 annex 38.

However, during course of validation several clarification and corrective action requests have been raised and closed successfully. Please refer table 2 of this report.

## 3.3 Programme Description

The “South African Large Scale Grid Connected Solar Park Programme” (here in after referred as the “PoA”) is promoted by the Coordinating and Managing Entity (CME) “Blue World Carbon Asset Management (Pty) Ltd” (BWC).

The description of the project activity contained in the PoA-DD and CPA-DDs is transparent, detailed and provides a clear overview of the project. Its content was confirmed by means of document review, site visit to the PP/CPA implementer and interviews on 24/08/2012 and 25/08/2012 in order to validate the accuracy and completeness of the project description.

Main changes between the PoA documentation (Version 1, dated 02/04/2012) /01/ published for the 30-day stakeholder commenting period and the final Version (Version 3.0) /03/, submitted for registration and issues related to the CARs and CLs identified during validation.

Review of PoA-DD /03/ reveals that the objective of this programme is to promote the use of renewable energy private companies of the RSA. Activities included into this programme envisage: Installation and operation of solar park at the site where there was no solar park operating prior to the implementation of the activity as well as the capacity addition to an existing solar park. The programme seeks to develop a series of grid connected solar power projects that supply clean electricity to either the national grid of the RSA or an identified consumer via RSA’s grid. The PoA aims to support sustainable development /05/ in the host country, RSA. This has been confirmed from the Letter of Approval provided by the PP/05/. As verified from the PoA-DD /03/ and declaration from the CME, the validation team confirms that the proposed programme is a voluntary co-ordinated action by the CME and the stated goal (voluntary which PoA seeks to promote) of the PoA is transparently explained in the PoA-DD /03/, this also confirms to the requirement of § 4 of EB 55 annex 38. There are no mandatory legislative or regulatory policies mandating the installed of grid connected solar power project in PoA geographical boundary. Review of PoA-DD /03/ reveals the definition of the boundary for the PoA in terms of a geographical area i.e. within RSA (within which all CPAs included in the PoA will be implemented) has been transparently defined and it take into consideration all applicable national and/or sectoral policies and regulations within that chosen boundary are reflected in the determination of the baseline. This confirms to the requirement of §6 (b) of EB 55 annex 38. This has also been confirmed based on interview with CME.

A typical CPA under this PoA is one of the following:



# VALIDATION REPORT

CDM VALidATION report NO CCL0026/SAGCSP/02042012

1. The installation of a new grid connected solar park at a site where no solar park was operated prior to the implementation of the activity; or
2. The capacity addition of an existing grid connected solar park<sup>1</sup>; or

Electricity generated from solar parks is supplied to either the national grid of the RSA or an identified consumer via the RSA's grid.

Currently in RSA most electricity generation is based on fossil fuel fired power plants. The state-owned company Eskom manages the energy system of the country. It is in charge of generation, transmission and distribution of power to end-users. The emission reduction would happen by displacing the fossil fuel dominated grid electricity equivalent to the net electricity supplied by the solar power plant i.e. the CPAs of the PoA to the RSA grid. Each CPA of the programme involves implementation of solar power project/s with an installed capacity that will be decided by the project participant prior to the inclusion of CPA into the registered PoA and supplying electricity to the grid i.e. RSA. Each CPA will implement either Photovoltaics (PV) technology or Concentrated Solar Power (CSP) technology

The validation team confirms that the PoA-DD /03/, transparently describes a typical CPA that will be included in the PoA covering the technology or measures to be used, justification of the choice of an approved baseline and monitoring methodology i.e. ACM0002, this also confirms to the requirement of § 6(f) of EB 55 annex 38. As per the PoA-DD, there is no fossil fuel consumption by the CPAs (which will use solar PV technology) of the PoA and their project site and hence there is no project emission.

In CPAs, where solar electricity generation will be based on CSP technology, there will be CO<sub>2</sub> emissions, since auxiliary fossil fuel consumption will take place, the GHG emissions per MWh for CSP power plants will be less than CO<sub>2</sub> intensity of electricity production from fossil fired electricity plants and therefore GHG emission reductions will take place. The CPAs of the PoA shall use Approved consolidated baseline and monitoring methodology ACM0002 (Version 12.3.0).

The reduction of GHG emissions as a result of the implementation of the independent activities will be achieved due to reduction of CO<sub>2</sub> emissions from combustion of fossil fuel at the existing grid-connected power plants and plants which would likely be built in the absence of the independent activities. In PoA, the total emission reduction for any CPA is accounted to a difference of Baseline emissions and Project Emissions. GHG emissions from the electricity generation by the Solar power projects accounts to zero as per the applied approved methodology ACM0002 for the CPAs which will use solar PV technology. From visit / interview to the project proponent and review of PoA-DD /03/, it is confirmed that CPAs of the PoA shall utilize brand new equipment; hence leakage is not applicable as per the applied methodology and hence not applicable for the CPAs of the PoA. CPAs which will use CSP (Concentrating Solar Power) Plant, there will be project emission on account of fossil fuel consumption at site. Therefore no project emission for solar parks based on PV technology but project emission envisaged for solar parks based on CSP technology.

The CDM programme activities (CPAs) under the PoA will be implemented within the geographical boundary of Republic of South Africa. Thus, the PoA aims to support RSA's efforts to move to a low carbon future, considering the contribution to sustainable development through environmental, social and economic benefits.

The Operating and implementing framework of the PoA has been clearly described and illustrated with the help of flowchart in section A.2 of the PoA-DD/03/, checked and found appropriate to the validation team.

---

<sup>1</sup>A capacity addition is an increase in the installed power generation capacity of an existing solar park through: (i) the installation of a new solar park beside the existing solar park, or (ii) the installation of new solar power plants, additional to the existing solar power projects. The existing solar power plants continue to operate after the implementation of the activity. Therefore the capacity addition does not significantly affect the performance of the existing solar park and the electricity fed into the grid by the capacity addition is directly metered.

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

According to the description provided under PoA-DD /03/ and based on interview with the CME, a signed declaration by CME /08-1/ and relevant stakeholders, validation team confirms that this PoA is a voluntary co-ordinated action by the CME. The same is also substantiated through the letter of approval (dated 31/10/2012) issued by the DNA of the host country /05/.

As per the PoA-DD/03/ and interviews it was confirmed that there are no existing laws or policy in Republic of South Africa that mandates or promotes the use of renewable sources (and solar power which is the case for the subject PoA) of electricity generation.

From the interviews/a//b//c//d/ and desk review of PoA-DD /03/ it is revealed that this programme does not involve any ODA funding. Thus, the validation team considers that no ODA funding from any Annex 1 country has been involved under this programme.

The starting date of the PoA in the PoA-DD/03/ is 01/03/2013. The length of the PoA is taken as 28 years. The starting date of the validation of the PoA is 05/04/2012 i.e. the date the PoA was published for GSC. In the PoA-DD/03/ and generic CPA-DD/04/, it has been confirmed that no CPA shall be applicable for the inclusion in the PoA if the start date is before the start of validation of PoA. This is in conformity with the § 7(d) of annex 38 of EB 55/B04-3/.

However, CARs (2, 3, 4, 5 & 6) and CLs (2,3 & 4) have been raised and closed successfully during validation process.

### 3.4 Eligibility Criteria for CPA Inclusion

Review of PoA-DD/03/, CPA-DD template/04/ and 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 § 15 &16, annex 5 of EB 70/B04-5/. This also confirms to the requirement of the § 15(b) of EB 55 annex 38. Additionality demonstration and compliance with the applicability of the applied methodology are the eligibility criteria as per the PoA-DD /03/, 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.



# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

SL. NO.	ELIGIBILITY CRITERIA DESCRIPTION IN POA-DD/03/ AND G-CPA-DD	INFORMATION/DOCUMENT REQUIRED AS LISTED IN THE POA-DD/03/ AND G-CPA-DD	ASSESSMENT BY THE VALIDATION TEAM
1.	All activities under the CPA are in the geographical area of the Republic of South Africa (RSA).	a) Environmental Authorization (EA) from the relevant Competent Authority (CA) of the RSA and b) Host Country approval from the DNA	At the time of inclusion request of any proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and integrity check.
2.	The location of each activity under the CPA is uniquely identified by the GPS coordinates. The GPS coordinates has been crosschecked with previous records of GPS coordinates of activities under the existing CPAs under this PoA to ensure that no overlap between activities can occur.	The GPS coordinates of each activity under the CPA <u>and</u> EA from the relevant CA of the RSA <u>or</u> EIA <u>or</u> basic assessment report.	At the time of inclusion request of any proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and integrity check.
3.	The owner of each activity under the CPA has contractually agreed and signed the following declarations: <b>A)</b> The activity has neither been and will not be registered as a CDM project activity nor as a CPA under another PoA; and <b>B)</b> The owner is aware that the activity will be subscribed to the present PoA.	Signed declaration from the owner of each activity under the CPA	At the time of inclusion request of any proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and integrity check.
4.	The CME has checked the UNFCCC CDM project database to verify that none of the activities under the proposed CPA has been previously submitted to the UNFCCC. If an activity has been submitted to the UNFCCC for validation or registration, the activity developer has to prove that the process of validation or registration has been withdrawn.	Signed declaration from the CME <u>or</u> from the CPA owner (if applicable)	At the time of inclusion request of any proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and integrity check.

# VALIDATION REPORT

CDM VALidATION report NO CCL0026/SAGCSP/02042012

5	<p>The CPA is one of the following:</p> <p><b>A)</b> The installation of a new solar park at a site where no solar park was operated prior to the implementation of the activity; or</p> <p><b>B)</b> The installation of multiple solar parks at various sites where no solar parks has been operated prior to the implementation of the activities; or</p> <p><b>C)</b> The capacity addition of an existing solar park herewith the electricity generation at existing solar park should not be affected by the CPA; or</p> <p><b>D)</b> Multiple capacity additions of existing solar park herewith the electricity generation at existing solar park should not be affected by the CPA.</p>	Completed EIA <u>or</u> basic assessment report.	At the time of inclusion request of any proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and integrity check.
6.	<p>Each activity under the CPA is connected to the national grid of the RSA via either:</p> <p><b>A)</b> The national transmission, distribution or reticulation lines; or</p> <p><b>B)</b> A municipal electricity network that is connected to the national transmission, distribution or reticulation lines.</p>	Power Purchase Agreement <u>or</u> permission to connect to the grid <u>or</u> application for any programme which intends to supply power to the grid <u>or</u> (in case documents mentioned above are not available) completed EIA or basic assessment report or feasibility study report.	At the time of inclusion request of any proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and integrity check.
7.	The start date of the CPA is clearly defined in the CPA-DD with supporting documentary evidence and is later than the date of start of global stakeholder process for the PoA (05/04/2012).	Signed contract with a supplier of solar electrical system(if available), <u>or</u> Purchase Order <u>or</u> the signed contract with the construction company to build the solar park, whichever is the earliest <u>or</u> the document which confirms the requirement of project start date as per the CDM glossary of terms	At the time of inclusion request of any proposed CPA, CME shall submit any of the mentioned documents to the DOE who will be performing validation for the consistency and integrity check. This eligibility criteria will ensure CPA start date of should not be before start date of validation as required by §7(d) of annex 38, EB 55.
8.	The CPA is in line with the applicability conditions of ACM0002 (version 12.3.0).	Signed declaration from CME	At the time of inclusion request of any proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

			integrity check.
9.	Additionality will be demonstrated individually by the CPA according to the procedures described in the Section E.5.1 of the CDM-CPA-DD.	<p>If step 0 in section E.5.1 of demonstrated:</p> <p>The list of power plant servicing the grid and their capacity.</p> <p>If step 0 in section E.5.1 is not demonstrated:</p> <p>IRR worksheets together with documentary evidence for all input parameters and assumptions.</p>	At the time of inclusion request of any proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and integrity check.
10.	The environmental impact assessment required by NEMA <sup>2</sup> regulation and local stakeholder consultations has been completed.	EA from the relevant CA of the RSA <u>and</u> photo copy of newspaper where invitation was published <u>or</u> copies of invitation sent to local stakeholders, <u>and</u> minutes of the meeting <u>and</u> list of attendance <u>and</u> list of comments received.	At the time of inclusion request of any proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and integrity check.
11.	No official Development Aid will be involved or diverted as a result of activities under the CPA. The official declarations of 'no development aid' have been provided by the solar park developers. If Annex 1 countries are involved, then a declaration from the concerned agency in Annex 1 country should also be submitted	Signed declaration from the Project developer <u>and</u> the concerned agency in Annex 1 country (if involved)	At the time of inclusion request of any proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and integrity check.
12.	The owner of each activity under the CPA is duly registered/incorporated entity of the RSA.	Company registration / incorporation certificate issued by Registrar of Companies	At the time of inclusion request of any proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and integrity check.
13.	The owner of each activity under the CPA has chosen to sell power through either the private PPA or Government PPA. In case the owner of the activity has chosen to sell power through the private PPA, the CME should monitor the records for sold electricity in order to make sure that the owner has not switched to Government PPA after the CPA inclusion. In case such switch took place, the activity will not be eligible for this	PPA <u>or</u> Draft PPA along with a Signed declaration from the project developer, in case the PPA has not been signed	At the time of inclusion request of any proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and integrity check.

<sup>2</sup> NEMA: National Environmental Management Act.

# VALIDATION REPORT

CDM VALidATION report NO CCL0026/SAGCSP/02042012

	PoA.		
14.	A CME has checked that the CPA satisfies the eligibility criteria of the latest version of the PoA-DD.	Signed declaration by CME	At the time of inclusion request of any proposed CPA, CME shall submit the mentioned documents to the DOE who will be performing validation for the consistency and integrity check.

Validation team has checked the Management System/07/ of CME and based on this documents and interview with personnel involved from the CME, the validation team confirms that the CME has competencies to check the features of potential CPAs of PoA and also have competency to check that each CPA meets all requirements and eligibility criteria before submission to the DOE for the inclusion. Based on above validation team confirms the compliance of § 15 -16 of annex 5 of EB 70/B04-5/.

However, during the course of validation CAR 3, CAR 4 & CL 1 were raised in this regard and closed successfully.

### 3.5. Operation and Management Plan

Validation team based on the review of PoA-DD /03/ and CME Management System /07/ confirms that clear and transparent description of the operational and management arrangement has been established by the CME for the PoA. The same has also been confirmed during the interview with representative of CME. All the details of individual CPAs including the documents shall be controlled by the CME. Furthermore the records of individual CPAs shall be maintained by the CME at their office in electronic (excel sheet) format /10/.

Individual CPA implementer shall sign agreements included in management system /07/ with the CME and agrees to comply with all terms and conditions of the PoA including those related to the monitoring and data control. Hence any CPA, which would be included in the PoA, shall follow the operation and management plan of the PoA as stated in the PoA-DD.

The system to avoid double counting and technical review of the potential CPAs of the PoA has been clearly indicated in the CME Management System/07/ specifically developed for the PoA. By reviewing the CME Management System/07/ the validation team confirms that the CME have the competencies to check the features of potential CPAs and can ensure that each CPA meets all requirements and eligibility criteria before inclusion in the registered PoA. Based on the above, the validation team confirms the compliance with the management system of CME (in line with the requirement of §19 annex 5 of EB 70 /B04-5/).

The CME Management System/07/ shall in due course of time as a part of continual improvement address any other relevant elements if required. This shall be checked again by the DOE at the time of inclusion of any CPAs in the PoA in line with the requirement of §19 of annex 5 of EB 70/B04-5/.

Based on the above it can be confirmed that the CME would be able to ensure that no double counting occurs. Also, as each CPA is uniquely identified in the format of 'CPA '###' under PoA 'South African Large Scale Grid Connected Solar Park Programme', the CME can check whether a CPA under the PoA is already a registered CDM project or CPA in another PoA from the UNFCCC website. In this regard the CME at the time of inclusion will provide the following documents: The signed form from the owner of activity to be included into the CPA as per Table 4 of the Management system /07/ and agreement with the CME /07/ and declaration from BWC /07/.

Based on above validation team confirms to the requirement of the §6 (i) and § 15(c) of EB 55 annex 38.

However, CAR 5 & 6 were raised and closed successfully during the validation process.

# VALIDATION REPORT

CDM VALidATION report NO CCL0026/SAGCSP/02042012

## 3.6. Monitoring Plan

There is no sampling approach for the verification of the CPAs of the PoA. As per PoA-DD/03/, the CME of the PoA opts for verification of the each CPA. Furthermore for the monitoring parameters to be opted by CPAs of the PoA, 100% data shall be monitored and no parameters shall be monitored on sampling approach. The same has been verified from the PoA-DD /03/.

The monitoring plan provides a transparent system to ensure that no double accounting occurs and that the status of verification can be determined at any time for each CPA. The system to avoid double counting has been indicated in the PoA-DD/03/. The owner of the project shall provide the signed Table 4 of the Management System/07/ of the PoA and an agreement with CME where he shall contractually agree that the activity has neither been and will not be registered as a CDM project activity nor as a CPA under another PoA; and 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. This confirms to the requirement of the §6 (j) of EB 55 annex 38.

The description provided in the PoA-DD on the operational and management arrangements were confirmed based on review of CME Management System/07/ and interviews with the CME.

However, CARs (12 & 13) and CL 6 were raised during the course of validation and successfully closed out.

## 3.7. Baseline and monitoring methodology

### 3.7.1. Applicability of selected methodology

The PoA has applied /03/,/04/ ACM0002 (version 12.3.0).The applied version of the methodology i. e ver.12.3.0 is not the latest version of methodology, however Requests for registration can be submitted until 11/01/2013 23:59:59 GMT, hence acceptable to the validation team.The compliance of the applied baseline and monitoring methodology/B02/ is a part of eligibility criteria as mentioned in the PoA-DD/03/ and g-CPA-DD/04/. The DOE shall check the same during inclusion of the CPA in the PoA. The assessment of the validation team (for the requirement to be checked during inclusion) is summarised below:

Applicability of ACM0002 (version 12.3.0)

This methodology is applicable to grid-connected renewable power generation project activities that: (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).- **Applicable** , Project activities under the CPA involve either the installation or capacity addition of a solar park, which shall be grid connected. This shall be checked during the CPA inclusion by the DOE performing inclusion validation.

S. NO.	CRITERIA OF METHODOLOGY	JUSTIFICATION IN POA-DD/03/ AND G-CPA-DD/04/	ASSESSMENT BY THE VALIDATION TEAM
1	The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), solar power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit.	<b>Applicable</b>  Activities under the CPA involve either the installation or capacity addition of a solar park.	It shall be checked during inclusion of the CPA that specific CPA comprises either the installation or capacity addition for renewable electricity generation by the means of solar electrical systems.

# VALIDATION REPORT

CDM VALidATION report NO CCL0026/SAGCSP/02042012

<p><b>2</b></p>	<p>In the case of capacity additions, retrofits or replacements (except for capacity addition projects for which the electricity generation of the existing power plant(s) or unit(s) is not affected): the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity addition or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.</p>	<p><b>Not Applicable</b></p> <p>This condition does not apply to capacity addition under this PoA. The electricity generation of existing power plants will not be affected (refer to eligibility criterion 5).</p>	<p>Not applicable as per the PoA-DD /03/ and g-CPA-DD /04/.</p>
<p><b>3</b></p>	<p>In case of hydro power plants, at least one of the following conditions must apply:</p> <ul style="list-style-type: none"> <li>• The project activity is implemented in an existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or</li> <li>• The project activity is implemented in an existing single or multiple reservoirs, where the volume of any of reservoirs is increased and the power density of each reservoir, as per the definitions given in the Project Emissions section, is greater than 4 W/m<sup>2</sup> after the implementation of the project activity; or</li> </ul> <p>The project activity results in new single or multiple reservoirs and the power density of each reservoir, as per the definitions given in the Project Emissions section, is greater than 4 W/m<sup>2</sup> after the implementation of the project activity</p>	<p><b>Not applicable</b></p> <p>Activities under the CPA involve using solar power and therefore it does not need to satisfy this applicability condition</p>	<p>Not applicable as per the PoA-DD /03/ and g-CPA-DD /04/.</p>
<p><b>4</b></p>	<p>In case of hydro power plants using multiple reservoirs where the power density of any of the reservoirs is lower than 4 W/m<sup>2</sup> after the implementation of the project activity all of the following conditions must apply:</p> <ul style="list-style-type: none"> <li>• The power density calculated for the entire project activity using equation 5 is greater than 4 W/m<sup>2</sup>;</li> <li>• All reservoirs and hydro power plants are located at the same river and where are designed together to function as an integrated project that collectively constitutes the generation capacity of the combined power plant;</li> <li>• The water flow between the multiple reservoirs is not used by any other hydropower unit which is not a part of the project activity;</li> <li>• The total installed capacity of the power units, which are driven using</li> </ul>	<p><b>Not applicable</b></p> <p>Activities under the CPA involve using solar power and therefore it does not need to satisfy this applicability condition</p>	<p>Not applicable as per the PoA-DD /03/ and g-CPA-DD /04/.</p>



# VALIDATION REPORT

CDM VALidATION report NO CCL0026/SAGCSP/02042012

	<p>water from the reservoirs with a power density lower than <math>4 \text{ W/m}^2</math>, is lower than 15MW;</p> <p>The total installed capacity of the power units, which are driven using water from reservoirs with a power density lower than <math>4 \text{ W/m}^2</math>, is less than 10% of the total installed capacity of the project activity from multiple reservoirs.</p>		
5	<p>Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site.</p>	<p><b>Not applicable</b></p> <p>Switching from fossil fuels to Renewable Energy is not allowed under this PoA. (According to the ACM0002, the CPA must not satisfy this applicability condition.)</p>	<p>Not applicable as per the PoA-DD /03/ and g-CPA-DD /04/.</p>
6	<p>Biomass fired power plants.</p>	<p><b>Not applicable</b></p> <p>Biomass fired power plants are not eligible for a CPA under this PoA. (According to the ACM0002, the CPA must not satisfy this applicability condition.)</p>	<p>Not applicable as per the PoA-DD /03/ and g-CPA-DD /04/.</p>
7	<p>Hydro power plants that result in new reservoirs or in the increase in existing reservoirs where the power density of the power plant is less than <math>4 \text{ W/m}^2</math>.</p>	<p><b>Not applicable</b></p> <p>Hydro power plants are not eligible for a CPA under this PoA. (According to the ACM0002, the CPA must not satisfy this applicability condition.)</p>	<p>Not applicable as per the PoA-DD /03/ and g-CPA-DD /04/.</p>
8	<p>In the case of retrofits, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is “the continuation of the current situation, i.e. to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance”</p>	<p><b>Applicable</b></p> <p>Capacity additions of the existing solar parks under this PoA will not affect the primary input and output for the existing power units. The output from the CPAs will be independently measured. Thus, the CME does not intent to include CPAs for which the baseline is as per equation (8) of the applied methodology</p>	<p>It shall be checked during inclusion of the CPA that in case the specific CPA involves capacity addition.</p>

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

Based on the above the validation team confirms to the requirement of the §6 (f) of EB 55 annex 38.

However, CAR 7 & CAR 9 was raised during the validation process and closed out.

## 3.7.2. CPA boundary

The boundary of the potential/future CPAs of the PoA has been assessed by the validation team.

Validation team confirms that the identified boundary, the selected sources, and gases as documented in the PoA-DD/03/ are justified for the CPA; hence all sources and GHGs required by the methodology have been included within the project boundary.

The spatial extent of the CPA boundary includes the proposed renewable energy power plants and all power plants physically connected to the grid of the Republic of South Africa.

There is only one GHGs involved in the project activity i.e., CO<sub>2</sub> (baseline emissions) from power plants serving the electricity grid.

The validation team confirms that the identified boundary, the selected gases and sources as documented in the PoA-DD/03/ are justified for the future CPAs of the PoA and is in line with the requirements set by the applied methodologies ACM0002 (Version 12.3.0)/B02/.

## 3.7.3. Baseline identification (scenario)

In accordance with the applied methodology ACM0002 (Version 12.3.0) /B02/, the baseline scenario is listed below.

All the CPAs to be included in this PoA will have only two alternatives, viz.,

- (a) The proposed project activity undertaken without being registered as a CDM project activity.
- (b) Continuation of the current situation (no project activity or other alternatives undertaken).

In South Africa, there is no legal requirement on the choice of a particular technology or mandatory legal requirement to use of solar energy and hence, the CPAs included under the PoA will be voluntary initiatives. Therefore, both the alternatives are credible, complete and are in conformity with local regulations. Moreover, since approved Methodologies ACM0002 /B02/ prescribes the base line, as per paragraph 105 of VVM (01.2) /B01/, no discussion on alternatives is necessary. In the above background, the validation team confirms that the PoA conforms to paragraph 106 of VVM (01.2) /B01/.

However, CAR 8 were raised and successfully closed during validation.

## 3.8. Additionality

### 3.8.1. Additionality of PoA

The description under the PoA DD /03/ demonstrates the compliance of § 6(e) of annex 38 of EB 55 /B04-3/. The stepwise validation of the same is summarized below:

RELEVANT TEXT OF § 6 (E) OF ANNEX 38 OF EB 55	ASSESSMENT OF THE COMPLIANCE
The proposed PoA is a voluntary coordinated action;	It has been stated in the PoA-DD/03/ that there is no mandatory legal requirement in RSA to generate electricity by installing solar power plants and also states that the national policy clearly favours fossil fuel based power generation.



# VALIDATION REPORT

CDM VALidATION report NO CCL0026/SAGCSP/02042012

	<p>The same was verified through the following documents:</p> <ul style="list-style-type: none"> <li>• Integrated Report ESKOM 2010 /16/</li> <li>• Declaration from the CME/08-1/</li> </ul> <p>Based on above assessment validation team confirms that the PoA is implementing a voluntary coordinated action.</p>
<p>If the PoA is implementing a voluntary coordinated action, it would not be implemented in the absence of the PoA;</p>	<p>As assessed above the PoA is implementing a voluntary coordinated action.</p> <p>Additionality will be done at each CPA level and criterion has been established to determine additionality at each CPA level. This approach has been verified to be in line with § 4 (b) of Annex 3 of EB 65/B04-5/. This § is relevant for the subject PoA under consideration. The relevant assessment of the investment barrier to demonstrate additionality, which is claimed for the substantiation of this paragraph, is explained in later part of this section.</p> <p>Hence additionality shall be demonstrated by each CPA of the PoA using criteria provided in the section E.5.1 of the POA-DD /03/, additionality demonstration is also identified as one of the eligibility criteria for the inclusion of any CPA in the PoA. Validation team confirms this in line with the requirements of PoA § 73 of EB 47 meeting report, which requires additionality is to be demonstrated either at the PoA level or at CPA level, for the subject PoA, CME opted to demonstrate additionality at CPA level and hence acceptable to the validation team.</p>
<p>If the PoA is implementing a mandatory policy/regulation, this would/is not enforced;</p>	<p>Not Applicable for this PoA</p>
<p>If mandatory a policy/regulation is enforced, the PoA will lead to a greater level of enforcement of the existing mandatory policy/regulation.</p>	<p>Not Applicable for this PoA</p>

The additionality of the programme has been presented in section E.5.1 of the PoA-DD /03/. The claim of the CME made in the PoA-DD has been assessed through document review, on site observations and subsequent interviews.

As the PoA applies the Applied Consolidated Methodology ACM0002 /B02/, therefore the additionality has been demonstrated using the Tool for the demonstration and assessment of additionality, version 07, EB 70 (Annex 08) /B04-7/

However, CAR 11 were raised and closed out successfully.

## 3.8.2. Approach for demonstrating CPA Additionality

A typical CPA to be included in this PoA will consist of installation of PV solar electrical system or CSP (Concentrated Solar Power) Plants at a site where no power plant was operational prior to the implementation of the project activity (green field plant) or addition of solar power plants to an already operating solar park with a total installed capacity of 15 MW or more, generating electrical energy,

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

which would be exported to / wheeled through national grid. Accordingly, the CPA under this PoA will use the approved methodology ACM0002 /B02/.

The CME has identified following two approaches for demonstration of additionality:

The additionality of the CPA is demonstrated and assessed using the “Tool for the demonstration and assessment of additionality, ver. 07, EB 70” as described in sec. E.5.1 of the PoA-DD/03/

Additionality of all CPAs under this PoA will be demonstrated based on the methodology ACM 0002, “Consolidated baseline methodology for grid-connected electricity generation from renewable sources (Version 12.3.0) read in conjunction with “Guidelines on Additionality of First-of-its-Kind Project Activities” (Annex 7, EB 69, version 02), or “Tool for the demonstration and Assessment of additionality” (Annex 08, EB 70, version 07). Where the project is demonstrated to be ‘first-of-its-kind’ in conformity with latest version of the “Guidelines on additionality of first-of-its-kind project activities” (Annex 7, EB 69, version 02), the additionality of the project will be deemed to have been demonstrated. In all other cases, CPA implementers will demonstrate additionality based on “Tool for the Demonstration and Assessment of Additionality” (Annex 08, EB 70, version 07) read with “Guidelines on the Assessment of Investment Analysis” (Annex 5, EB 62 version 05). CPAs choosing investment analysis will complement the additionality demonstration by common practice analysis, for which the CPAs will follow “Guidelines on Common Practice” (Annex 08, EB 69, version 02.0).

Once it has been demonstrated that the proposed CPA is FOIK then as stated in Paragraph 18 of the Additionality tool and Paragraph 6 of the Guidelines, it will be additional.

## **Prior Consideration CDM**

All CPAs to be included in the PoA will have start date after 05/04/2012, that is, the date on which the validation of PoA commenced. Since the start date of the project will be after 05/04/2012, all the CPAs to be included in the PoA will be *new project activities* as per Annex 13, EB 62 /B04-11/. As per clarifications offered by EB Vide Annex 26, EB 60 /B04-6/, since no CPAs will commence prior to the start date of validation of PoA, provisions of Annex 13, EB 62 /B04-11/ do not apply to CPAs. In order to make the CPA transparent, the CPAs to be included in the PoA will clearly state the start date of the project, in conformity with Glossary or CDM terms (Ver 06) /B05/ and furnish credible documentary evidence in support of the same.

## **Appropriateness of Alternatives**

All the CPAs to be included in this PoA will have only two alternatives, viz.:

- (a) The proposed project activity undertaken without being registered as a CDM project activity.
- (b) Continuation of the current situation (no project activity or other alternatives undertaken).

In South Africa, there is no legal requirement on the choice of a particular technology or mandatory legal requirement to use of solar energy and hence, the CPAs included under the PoA will be voluntary initiatives. Therefore, both the alternatives are credible and are in conformity with local regulations. Moreover, since approved Methodologies ACM0002 /B02/ prescribes the base line, as per paragraph 105 of VVM (01.2) /B01/, no discussion on alternatives is necessary. In the above background, validation team confirms that the PoA conforms to paragraph 106 of VVM (01.2) /B01/.

## **Appropriateness of Investment Analysis**

The project activities getting registered under the PoA would be either new (green-field) or expansion projects (brown-field) installing solar PV System or CSP (Concentrated solar Power) plants for electrical energy generation. Since the generated electricity will result in income generation, as the generated electricity will be sold to grid, over and above CER income, simple cost analysis cannot be used. Since the CPA operators have an option to invest or not to invest and the baseline is outside the direct control of CPA operators, investment comparison analysis is not appropriate; hence benchmark analysis will be used. Validation team is, therefore, convinced that the use of benchmark analysis is appropriate as the selected investment analysis conforms to Guidance 19 of Annex 5, EB 62 /B04-10/ and paragraph 108 of VVM (Ver. 01.2)/B01/.

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

## Appropriateness of Financial Indicator

Since the generated power will result in income, other than CER income, CPAs will use Internal Rate of Return (IRR) as financial indicator for additionality demonstration. While Equity IRR will be used where the project is funded entirely by equity, project IRR will be used where the project is funded by a debt and equity mix. IRR is one of the financial indicators used by banks and investors alike all over the world to ascertain the investment worthiness of the project. Moreover, Additionality Tool /B04-7/ and Guidelines on Investment Analysis /B04-10/ also permit the use of equity and project IRR as one of the financial indicators for additionality demonstration. Therefore, validation team considers the project/equity IRR as most suitable financial indicators for the project type and decision making context and is in conformity with paragraph 109 (a) and (c) of VVM (01.2)/B01/.

## Benchmark

CPAs included in the PoA will select the benchmark depending on the financing pattern of the projects and the financial indicator used for additionality demonstration. In general, CPAs will use local commercial lending rates (sourced from the South African Reserve Bank publication) or weighted average costs of capital (WACC) as benchmark for project IRR and required/expected returns on equity including the default rate of return on equity prescribed in the Appendix to Annex 5, EB 62 /B04-10/ converted to nominal terms based on the methodology prescribed in the said Appendix, as benchmarks for Equity IRR. The selected benchmarks are appropriate for the financial indicator selected as they conform to paragraph 12 of Annex 5, EB 62 /B04-10/. Since the solar power project can be set up by any other project developer than the CPA, internal benchmark will not be used. All the parameters used for the benchmark determination will be standard in the market and sourced from independently verifiable public sources. The benchmark selection, therefore conforms to Annex 5, EB 62 /B04-10/ read with paragraph 112 of VVM (01.2) /B01/.

## Validation of input parameters

As stated earlier, the project activity under this PoA will consist of the installation of solar PV system or CSP (Concentrated solar Power) Plants for electrical energy generation. Therefore, the projects coming under PoA can be broadly divided into two categories, viz.

- a) projects installing solar electrical system or CSP (Concentrated solar Power) plants at a site where no power plant was operational prior to the implementation of the project activity (green field plant); or
- b) projects adding solar electrical system or CSP (Concentrated solar Power) plants to an already operating solar park (brown field plant)

The PoA has, therefore, standardised the input parameters and the documentary evidence to be submitted in support of each of the input parameters. Depending on the projects, a few parameters will not be applicable. The acceptable source for input parameters has been determined in the PoA-DD /03/ and leaves no scope for the projects to use alternative sources. Besides, while validating each project seeking registration under the PoA, the DOE will cross check the input parameters with available evidence, third-party or publicly available sources and with other parameters located in the same area and set up around the same time. In case the input parameters is sourced from FSR, the validation team would cross check the information contained in the PoA-DD vis-a-vis the FSR and based on its local and sectoral expertise, ensure the input parameters are valid and applicable at the time of investment decision. CME has prepared an IRR calculation template /20/. The template also clearly states the input parameters (requiring manual entry) used and what are calculations (which the system automatically does once the input parameters are entered). All the cells are linked appropriately and with very little manual intervention, the template will yield the financial indicator. The validation team will check the calculations and ensure the CPA conforms to guidance given vide paragraph 88 and 113 of VVM (01.2) /B01/.

## Accounting principles and Arithmetical Accuracy

The worksheet template /20/ is fully linked and requires very little manual intervention. Since cells are linked, the template ensures arithmetical accuracy of calculations also. In the above background, the validation team concludes that the accounting principles have been taken care of and the template assures arithmetical accuracy. Therefore, the PoA project activities would conform to the requirements of paragraph 111 of VVM (Ver. 01.2) /B01/.

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

## Sensitivity analysis

PoA project activities would be tested for the robustness of the conclusion, viz., that the project activity is not economically or financially attractive by subjecting critical parameters to reasonable variations. Accordingly, the following parameters will be subjected to sensitivity analysis:

- a) Project cost
- b) Generation
- c) Tariff
- d) O&M cost
- e) Admin cost

All the costs reckoned above will constitute 20% of the project cost/total revenue. Depending on the projects, a few other costs will also be subjected to sensitivity analysis. All the parameters will be subjected to a 10% variation on either side in conformity with guidance 21 of Annex 5, EB 62 /B04-10/. Template contains facility to check the sensitivity analysis results. The validation team is, therefore, convinced that the sensitivity analysis conforms to Guidance 20 and 21 of Annex 5, EB 62 /B04-10/ and paragraph 111 of VVM (01.2) /B01/.

## Common Practice Analysis

Step 4 of Additionality Tool states that unless the proposed project type has demonstrated to be 'first-of-its kind', project developer has to complement additionality tests with an analysis of the extent to which the proposed project type has already diffused in the relevant sector and region as a credibility check. Therefore, the CPA operators have to either demonstrate the project is 'first-of-its-kind' in the geographical region in conformity with Annex 7, EB 69/B04-12/ or demonstrate common practice analysis in conformity with Step 4 of Additionality Tool read with Annex 8 of EB 69 /B04-13/. All the CPAs to be included in the PoA would involve generation of power (output), using solar energy (technology) in Republic of South Africa (geographical region). CPAs to be included in the PoA will have to furnish credible documentary evidence on the projects generating similar output, within the output range, in the geographical region and were operational before the submission of CPA for validation or the start date of the CPA, whichever is earlier. The common practice analysis should conclusively prove that the project is not a common practice in the selected region in conformity with step 4 of Additionality Tool read with Annex 8 of EB 69/B04-12/.

## Conclusion

The performance of the template /20/ has been checked for the real case CPA submitted along with the PoA-DD. The financial spreadsheet calculation of the real case CPA has also been presented, which confirms that IRR of project activity is less than the benchmark. In the above background, validation team is convinced that the proposed methodology for evaluating the additionality of the PoA project activities is appropriate and valid.

## 3.9. Emission reduction from a typical CPA of the PoA

CCL conducted the assessment of baseline emissions, project emissions, leakage, and emission reductions. The parameters and equations presented in the PoA-DD, as well as other applicable documents, have been compared with the information and requirements stipulated in the methodology /B02/ and respective tools/B03/. The assumptions and data used to determine the emission reductions are found to be appropriately described in the PoA-DD /03/ and all the sources have been assessed and confirmed by validation team. Based on the reviewed information, it is concluded that the sources used are correctly quoted and interpreted in the PoA-DD /03/. The baseline methodology /B02/is correctly applied.

### a) Baseline Emissions

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

Baseline emissions include only CO<sub>2</sub> emissions from electricity generation in fossil fuel fired power plants that are displaced by the proposed CPA. The procedure for calculation of baseline emissions presented in the PoA-DD /03/ is found to be in line with the applied methodology ACM0002 /B02/.

## Assessment of calculation of Grid Emission Factor (EF<sub>CO<sub>2</sub>, grid,y</sub>)

Calculation of CO<sub>2</sub> emission factor of the grid (EF<sub>CO<sub>2</sub>, grid, y</sub>) is done/13/ according to the latest version of "Tool to calculate the emission factor for an electricity system, version 3 /B03/, and data used for determination of ex-ante EF is obtained from state-owned company Eskom /B07/ which is the only company in the South Africa in charge of generation, transmission and distribution of power to end-users. The combined margin emission factor (CM) of the electricity system consists of the combination of operating margin (OM) and build margin (BM). The resultant CM emission factor is arrived to 0.988 tCO<sub>2</sub>/MWh. Emission factor (CM) calculation /13/ is hence, found to be correct and in accordance with the procedure and formulas laid down under "Tool to calculate the emission factor for an electricity system, version 3, The table below describes how the validation team cross-checked the calculation of emission the factor of the grid (EF<sub>CO<sub>2</sub>, grid,y</sub>):

STEP	DESCRIPTION	DETERMINATION AND ASSESSMENT OF GEF CALCULATION /13/	JUSTIFIED
1	Identify the relevant electricity systems.	The project electricity system includes all power plants attached to the Republic of South Africa national grid. The electricity system in South Africa is a single system, i.e. South African national grid as confirmed by Eskom Integrated report /B07/. The DNA of South Africa has not published the delineation of the project electricity system and connected electricity systems, however the national utility, Eskom, has published it /B07/.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2	Choose whether to include off-grid power plants in the project electricity system (optional).	Option I (Only grid power plants are included in the calculation) is selected. Off-grid power plants play a very minor role in South Africa's power generation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3	Select a method to determine the operating margin (OM).	Simple OM (out of the four methods provided in the tool /B03/) is applied for the calculation of the operating margin, since the low-cost/must-run resources constitute less than 50% of total South African grid generation. The average values of the five most recent years shows that coal-fired power plants constitute approximately 92.84% of the South African generation capacity, whereas hydro and nuclear, both classified as low-cost and must-run power plants, constitute almost 7.03% of the national grid /B07/.  The validation team confirms that data applied is consistent with the report published by Eskom. Thus the selection of OM calculation method is justified.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

4	Calculate the operating margin emission factor ( $EF_{grid,OM,y}$ ) according to the selected method.	<p>In the PoA DD, Option A, is selected to calculate the operating margin emission factor.</p> <p>The validation team confirms that data of quantity of electricity generated, types of fuel used and consumption of each fuel type are the latest 3 years data, most recent data available at the time of submission of the CDM-DDs to the DOE for validation and they are sourced from available data published by the Eskom and IPCC/B07/ which is the default value. PP has considered /03/, the Option A (A for coal-fired power plants/units, as data on fuel consumption and electricity generation for each coal-fired power unit m is available and option B for gas turbine power plants as for gas turbine power plants data on fuel consumption are not available and only data on electricity generation is presented in the public domain for the calculation of simple OM, which is in line with the requirement of tool /B03/. The entire data base is explained in Section B.6.2 &amp; Annex 3 of the PoA DD /03/ which are sourced from Eskom website.</p> <p>Therefore, the calculated <b>OM = 1.011 tCO<sub>2</sub>/MWh</b> is correct and in line with the requirements of tool.</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5	Calculate the build margin (BM) emission factor.	<p>Option 1) is chosen in which the BM is calculated ex-ante for the first crediting period of the PoA based on the most recent available data at the time of submission of the CDM-DDs to the DOE for validation i.e., for the year 2010.</p> <p>Validation team based on document review /B07/ confirms that the annual electricity generation of the set of five power units (SET5-units) is larger than the annual electricity generation of the set of power capacity additions in the electricity system that comprise 20% of the system generation and that have been built most recently (AEG&gt;20%) and the power units in SET<sub>sample</sub> started to supply electricity to the grid less than 10 years. Also they do not include registered CDM projects.</p> <p>The validation team confirms that the</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No



# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

		BM calculation is correctly applied complying with the Tool.  Therefore, <b>BM = 0.92 tCO<sub>2</sub>/MWh</b> is justified.	
6	Calculate the combined margin (CM) emissions factor.	According to the “ <i>Tool to calculate the emission factor for an electricity system</i> ” (Version 3) /B03/, the default weights applicable for solar projects are wOM = 0.75 and wBM = 0.25. The CM has been calculated for the first crediting period and fixed ex-ante.  The weighting of OM emission factor and BM emission factor for calculate CM emission factor is categorized by type of CDM project. The calculation of <b>CM = 0.988 tCO<sub>2</sub>/MWh</b> is justified.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

As per the PoA DD /03/, the CM is fixed or the first crediting period of the PoA for all CPAs to be included during the first crediting period of PoA.

## b) Project Emissions

Being a Solar energy programme, consideration of project emission as zero is appropriate for CPAs which will opt for solar PV technology but there will be project emissions from CPAs which will use CSP technology as per the applied methodology ACM0002 version 12.3.0 /B02/.

## c) Leakage

As the CPAs will not involve into activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing and transport), hence the applied methodology ACM0002 (12.3.0) /B02/ confirms that No leakage emissions are considered. ( $LE_y = 0$ )

## d) Emission Reduction

In summary, the calculation of emission reductions was correctly demonstrated by the PP according to the methodology ACM0002 (Version 12.3.0)/B02/and its tool “Tool to calculate the emission factor for an electricity system (version 03) /B03/”.

The validation team based on the review of PoA-DD/03/ confirms that the formulae are correctly presented for the determination of emission reductions. The parameters and equations presented in the PoA-DD /03/, as well as other applicable documents, have been compared with the information and requirements presented in the methodology. An equation comparison has also been made to ensure consistency between all the formulae presented in the PoA-DD/03/.

However, during the course of validation CAR 10 and CL 5 were raised and successfully closed during the validation process.

## 3.10. Monitoring Plan of a typical CPA

The monitoring plan presented in the PoA-DD/03/ and g-CPA-DD/04/ complies with the requirements of the applicable methodology. The validation team checked all parameters in the monitoring plan against the requirements of the methodology and monitoring plan found to be adequate for proposed programme type.

The validation team through a document review and interviews with the relevant personnel has reviewed the procedures. The information provided has allowed the validation team to confirm that the

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

proposed monitoring plan is feasible within the project design. The relevant points of monitoring plan have been discussed with the CME of the PoA and the CPA implementer.

The management system document/07/ of the CME provide sufficient information, which forms the basis of confirmation by the validation team on the issues related but not limited to the monitoring methodology, data management, and the quality assurance and quality control procedures to be implemented in the context of the programme. Therefore, it can be concluded that the CME and/or CPA implementer(s) will be able to implement the monitoring plan and the achieved emission reductions can be reported ex-post and verified. This confirms to the requirement of the §6 (j) of EB 55 annex 38.

However, CAR 13 and CL 6 were raised during the course of validation and successfully closed out.

## 3.10.1. Parameters determined ex-ante

Following are the parameters as per the PoA DD /03/, fixed either ex-ante at the PoA level or shall be fixed ex-ante at the time of inclusion of the CPA:

- Net quantity of electricity generated and delivered to the grid by power unit  $m$  in year  $y$  ( $EG_{m,y}$ )
- Amount of fossil fuel type  $i$  consumed by power unit  $m$  in year  $y$  ( $FC_{i,m,y}$ )
- Net calorific value of Other Bituminous Coal ( $NCV_{Coal,y}$ )
- CO<sub>2</sub> emission factor of Other Bituminous Coal ( $EF_{CO_2,Coal,y}$ )
- CO<sub>2</sub> emission factor of Natural Gas ( $EF_{CO_2,NG,y}$ )
- Average net energy conversion efficiency of open cycle gas turbine power plant ( $\eta_{OCGT}$ )
- Average net energy conversion efficiency of coal-fired power plant that has operated for more than 10 years ( $\eta_{m,y}$ )
- Net quantity of electricity generated and delivered to the grid by power unit  $n$  in year  $y$  ( $EG_{n,y}$ )
- Amount of fossil fuel type  $i$  consumed by power unit  $n$  in year  $y$  ( $FC_{i,n,y}$ )
- Combined margin CO<sub>2</sub> emission factor for grid connected power generation calculated ex ante ( $EF_{CO_2,CM,y}$ )
- Power capacity of the  $i$  activity under the CPA in year  $y$  ( $P_{i,y}$ ).

Parameters determined ex-ante are found to be appropriate and in line with the applied Tool to calculate the emission factor for an electricity system, version 03 /B03/ and applied methodology ACM0002 version 12.3.0 /B02/.

## 3.10.2. Parameters determined ex-post

The parameter as per the PoA-DD /03/, shall be monitored (based on the type of CPA) ex-post by the CPAs of the PoA will be  $EG_{CPA,y}$  (On-site measurement with electricity meters, yielding the net electricity supplied to the grid of the RSA. Readings will be cross-checked with records for sold/purchased electricity). For CPAs which will use CSP technology, project emission is also envisaged and following parameters will also be monitored ex-post to calculate project emission:

- The quantity of fuel type  $i$ , combusted in year  $y$  ( $FC_{i,y}$ )
- The weighted average net calorific value of the fuel type  $i$  in year  $y$  ( $NCV_{i,y}$ )
- The weighted average CO<sub>2</sub> emission factor of fuel type  $i$  in year  $y$  ( $EF_{CO_2,i,y}$ )

Based on the assessment of PoA-DD /03/ and CPA-DD /04/ against the applied methodology ACM0002 /B02/, ex-post parameter is found to be appropriate by the validation team.

## 3.10.3. Monitoring and reporting system and quality assurance

The operational and management structure of the CME in context of the PoA has been clearly described in the PoA-DD /03/ and checked from the review of CME Management System document /07/ provided by the CME. The responsibilities and institutional arrangements for data collection and archiving has been clearly provided in the same document /07/.



# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

Monitoring structure for the project activity is comprehensively detailed in the PoA-DD/03/ including description of the responsibility, procedure reference, equipment details, calibration frequency, and maintenance and archiving of the records is clearly indicated. By reviewing the monitoring procedure and requirements provided in CME Management System/07/ for the PoA and interview with the PPs, validation team confirms that the monitoring arrangements described in the monitoring plan are feasible within the PoA-DD/03/, and the means of implementation of the monitoring plan is sufficient to ensure the emission reductions achieved by the PoA can be reported ex post and verified.

## 3.11. Environmental Impacts

It has been indicated in the PoA-DD/03/, that the environmental analysis shall be done at the individual CPA level. The localized impact of each CPA shall be assessed individually which justifies separate environmental analysis. This is deemed appropriate in the context of the CPAs of the PoA.

## 3.12. Local stakeholders consultation

It has been indicated in the PoA-DD /03/, that the local stakeholder consultation shall be done at the individual CPA level. As, in order to include essential project specific information and to ensure that the all the affected parties have the best opportunity to attend. This is deemed appropriate in the context of the CPAs of the PoA.

## 4. COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

The PoA-DD /01/ (dated 02/04/2012), g-CPA-DD/02/ and real-case CPA-DD (dated 02/04/2012), were made publicly available on UNFCCC's website(<http://cdm.unfccc.int/ProgrammeOfActivities/Validation/DB/IEDW92WLY4YEAVP9FUKUA7OH2UWSFK/view.html>)and parties, stakeholders and NGOs were through the CDM website invited to provide comments during a 30 days period from 05/04/2012 to 04/05/2012, where no comment was received.

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

## APPENDIX A

### VALIDATION PROTOCOL FOR PROGRAMME OF ACTIVITIES SOUTH AFRICAN LARGE SCALE GRID CONNECTED SOLAR PARK PROGRAMME REPORT No. CCL0026/SAGCSP/02042012

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

## Validation Protocol CDM-PoA-DD

**Programme (PoA) Title: “South African Large Scale Grid Connected Solar Park Programme”**

**Table 1: Conformity of CDM Programme of Activities (PoA)**

Checklist Question	Ref	MoV	Assessment	Draft Conclusion	Final Conclusion
A. General Description of the Programme of Activities (Project Design)					
A.1. Title of the PoA					
A.1.1. Does Sections A.1 of the PoA-DD include a clearly identifiable project title, version number of the PoA-DD and date of the PoA-DD?	/1/	DR, CC	<p>Yes, Section A.1 of the PoA-DD, clearly states the project title “South African Large Scale Grid Connected Solar Park Programme”, its version number “1.0” and its date “02/04/2012”. The same has been verified from the UNFCCC-website.</p> <p>However confirmation by the host Party has not been submitted to the DOE for validation. Hence a CAR has been raised.</p> <p>CAR 1: A Letter of Approval, issued by the DNA of the host Party has not been submitted to the DOE for validation.</p>	CAR 1	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

A.1.2. Is the PoA-DD in accordance with the applicable requirements for completing PoA-DDs?	/1/ /B04-1/	DR, CC	The template of the Programme of Activities Design Document Form (CDM-PoA-DD) – Version 01 has been altered as the footer has been deleted. Hence a CAR has been raised.  CAR 2: The footer in the CDM-PoA-DD has been deleted thus altering the template.	CAR 2	OK
<b>A.2. Programme Boundaries: Programme Boundaries are the limits and borders defining the GHG emission reduction project activity.</b>					
A.2.1. Are the programme's spatial boundaries (geographical) clearly defined as per PoA-DD completion guidance?	/1/ /B04/	DR	In Section A.4.1.2. of the PoA-DD, the geographical boundary of the PoA has been defined as the Republic of South Africa.	OK	OK
A.2.2. Are the programme's system boundaries (components and facilities used to mitigate GHGs) clearly defined and aligned with applicable requirements of the relevant methodology?	/1/ /B02/	DR	As described in Section A.4.2. a typical CPA under this PoA is either the installation of a new grid connected solar park at a greenfield site or the capacity addition of an existing grid connected solar park. This is conform the applicable requirements of the applied methodology ACM0002 as demonstrated in section E.1.2., criteria 1 & 2 below.	OK	OK
A.2.3. Can each CPA under the PoA be clearly identified individually including spatial boundaries (geographical)	/1/ ,/B04/	DR	As stated in the Table A.4-2 in Section A.4.2.2. of the PoA-DD,	OK	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

clearly defined?			as part of the eligibility criteria for inclusion of a CPA in the PoA, the location of each CPA is uniquely identified by GPS coordinates.		
<b>A.3. CPA Inclusion Criteria</b>					
A.3.1. Are the CPA inclusion criteria (as described and listed in section A.3.1.1. – A.3.1.10. below) described and are they verifiable and objective permitting the assessment of the inclusion of CPAs into the PoA? And are they complete?	/01/ /B04/	DR, CC	<p>The PoA eligibility criteria as listed in Table A.4-2 in Section A.4.2.2. of the PoA-DD, are not verifiable and sufficiently objective and comprehensive, permitting the assessment of the inclusion of CPAs in the PoA, as required by paragraph 15 &amp; 16 of Standard EB65 Annex 3. Hence a CAR has been raised.</p> <p>CAR 3: The PoA eligibility criteria as listed in Table A.4-2 in Section A.4.2.2. of the PoA-DD, are not verifiable and sufficiently objective and comprehensive, permitting the assessment of the inclusion of CPAs in the PoA, as required by paragraph 15 &amp; 16 of Standard EB65 Annex 3.</p>	CAR 3	OK
A.3.1.1. The geographical boundary of the CPA including any time-induced boundary consistent			Depending on closure of CAR 3 as stated in section A.3.1.	Refer CAR 3	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

with the geographical boundary set in the PoA;			above		
A.3.1.2. Conditions that avoid double counting of emission reductions like unique identifications of product and end-user locations (e.g. programme logo);			Depending on closure of CAR 3 as stated in section A.3.1. above.	Refer CAR 3	OK
A.3.1.3. The specifications of technology/measure including the level and type of service, performance specifications including compliance with testing/certifications;			Depending on closure of CAR 3 as stated in section A.3.1. above.	Refer CAR 3	OK
A.3.1.4. Conditions to check the start date of the CPA through documentary evidence;			Depending on closure of CAR 3 as stated in section A.3.1. above.	Refer CAR 3	OK
A.3.1.5. Conditions that ensure compliance with applicability and other requirements of single or multiple methodologies applied by CPAs;			Depending on closure of CAR 3 as stated in section A.3.1. above.	Refer CAR 3	OK
A.3.1.6. The conditions that ensure that CPAs meet the requirements pertaining to the demonstration of additionality as specified in Section A of EB65 Annex 3;			Depending on closure of CAR 3 as stated in section A.3.1. above.	Refer CAR 3	OK
A.3.1.7. The PoA-specific requirements stipulated by the CME including any conditions related to undertaking local stakeholder consultations and environmental impact analysis;			Depending on closure of CAR 3 as stated in section A.3.1. above.	Refer CAR 3	OK
A.3.1.8. Conditions to provide affirmation that funding from Annex I parties, if any, does not result in a diversion of official development assistance;			Depending on closure of CAR 3 as stated in section A.3.1. above.	Refer CAR 3	OK
A.3.1.9. Where applicable, target group (e.g. domestic/commercial/industrial, rural/urban, grid-connected/off-grid) and distribution mechanisms (e.g. direct installation);			Depending on closure of CAR 3 as stated in section A.3.1. above.	Refer CAR 3	OK
A.3.1.10. Where applicable, the conditions related to sampling requirements for a PoA in accordance with the approved guidelines/standards from the Board pertaining to sampling and surveys;			Depending on closure of CAR 3 as stated in section A.3.1. above.	Refer CAR 3	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

<p>3.2. Has CME identified additional eligibility criteria for CPA inclusion into the PoA? And are these criteria verifiable and sufficiently objective and comprehensive permitting assessment of CPA inclusion?</p>	<p>/01/ /B04/</p>	<p>DR, CC</p>	<p>As stated in Table A.4-2: Eligibility criteria in Section A.4.2.2. of the PoA-DD, the CME has identified an additional CPA inclusion eligibility criterion to the criteria as required per EB65 Annex 3: <i>"A CME has checked that the CPA satisfies the eligibility criteria of the latest version of the PoA-DD"</i>. However this criterion has not been made objective and verifiable as required by paragraph 15 &amp; 16 of the standard (EB65 Annex 3). Hence a CAR has been raised.</p> <p>CAR 4: The CME has not made the additional eligibility criterion for CPA inclusion objective and verifiable as per the applicable standard (EB65 Annex 3).</p> <p>In Section A.4.3. of the PoA-DD the CME has identified 3 mandatory legal requirements (i.e. environmental, construction and operational permits). However the CME has not made provisions to evaluate these as CPA inclusion</p>	<p>CAR 4 CL 1</p>	<p>OK</p>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------	-------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------	-----------

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

			<p>criteria, nor has a justification been provided. Hence a CL has been raised.</p> <p>CL 1: CME is requested to explain why the identified legal requirements, as identified in Section A.4.3., have not been evaluated prior to inclusion of CPA.</p>		
<p>A.4. Participation Requirements: <i>Referring to Part A, Annex 1 and 2 of the PoA-DD as well as the CDM glossary with respect to the terms Party, Letter of Approval, Authorization and Project Participant.</i></p>					
A.4.1. Which Parties and programme participants are participating in the programme?	/1/	DR	The Republic of South Africa has been identified as the host Party and Blue World Carbon Asset Management (Pty) Ltd has been identified as the project participant, as stated in Section A.3. of the PoA-DD.	OK	OK
A.4.2. Has the coordinating/managing entity of the programme been identified?	/1/ /B04/	DR, CC	Blue World Carbon Asset Management (Pty) Ltd has been identified as the CME of this PoA, as stated in Section A.3. of the PoA-DD. However, it has not been clearly stated whether the CME is the entity which communicates with the board. Hence a CL has been raised.	CL-2	OK



# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

			CL 2: The project participant is requested to clarify in Section A.3. of the PoA-DD whether the CME is the entity that communicates with the board.		
A.4.3. Have all involved Parties provided a valid and complete letter of approval and have all private/public programme participants been authorized by an involved Party?	/1/ /4/	DR, CC	The written approval by the DNA of the host Party has not been submitted to the DOE for validation. Hence a CAR has been raised.  Depending on closure of CAR 1	Refer CAR 1	OK
A.4.4. Do all participating Parties fulfil the participation requirements as follows: - Ratification of the Kyoto Protocol - Voluntary participation - Designated a National Authority?	/01/ ,/B06/	DR, CC	Yes, as verified per the UNFCCC-website, the host Party, Republic of South Africa, fulfils the participation requirements, having ratified the Kyoto Protocol on 31/07/2002 and having established the "Department of Energy", as its DNA.  However written approval of voluntary participation from the DNA has not been submitted for validation; hence is being referred to CAR 1 as stated in section A.1.1. above.	Refer CAR 1	OK
A.4.5. Do all participating Parties fulfil the participation	/01/ ,	DR,	Refer section A.4.4. above	OK	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

requirements as follows:	/B06/	CC			
a) Party has ratified the Kyoto Protocol			Refer section A.2.4. above	OK	OK
b) Party has designated a Designated National Authority			Refer section A.2.4. above	OK	OK
c) The assigned amount has been determined			South Africa is not an Annex I country and thus an individual emissions target has not been determined.	OK	OK
A.4.6. Does each letter of approval meet the following requirements?					
1. LoA confirms that Party has ratified the Kyoto Protocol	/01/	DR	A Letter of Approval, issued by the DNA of the host Party, has not been submitted to the DOE for validation.  Depends on the closure of CAR 1 in section A.1.1. above.	<del>Refer CAR 1</del>	OK
2. LoA confirms that participation is voluntary	/01/	DR	A Letter of Approval, issued by the DNA of the host Party, has not been submitted to the DOE for validation.  Depends on the closure of CAR 1 in section A.1.1. above.	<del>Refer CAR 1</del>	OK
3. The LoA confirms that the project contributes to the sustainable development of the host	/01/	DR	A Letter of Approval, issued by the DNA of the host Party, has	<del>Refer CAR 1</del>	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

country?			not been submitted to the DOE for validation.  Depends on the closure of CAR 1 in section A.1.1. above.		
4. The LoA refers to the precise project	/01/	DR	A Letter of Approval, issued by the DNA of the host Party, has not been submitted to the DOE for validation.  Depends on the closure of CAR 1 in section A.1.1. above.	<del>Refer CAR 1</del>	OK
5. The LoA is unconditional with respect to (a) to (d) above activity title in the POA	/01/	DR	A Letter of Approval, issued by the DNA of the host Party, has not been submitted to the DOE for validation.  Depends on the closure of CAR 1 in section A.1.1. above.	<del>Refer CAR 1</del>	OK
6. The LoA is issued by the respective Party's DNA	/01/	DR	A Letter of Approval, issued by the DNA of the host Party, has not been submitted to the DOE for validation.  Depends on the closure of CAR 1 in section A.1.1. above.	<del>Refer CAR 1</del>	OK
7. The LoA was received directly by the DNA or the PP DNA	/01/	DR	A Letter of Approval, issued by the DNA of the host Party, has not been submitted to the DOE	<del>Refer CAR 1</del>	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

			for validation.  Depends on the closure of CAR 1 in section A.1.1. above.		
8. In case of doubt regarding the authenticity of the letter of approval, describe how it was verified that the letter of approval is authentic	/01/	DR	A Letter of Approval, issued by the DNA of the host Party, has not been submitted to the DOE for validation.  Depends on the closure of CAR 1 in section A.1.1. above.	<del>Refer CAR 1</del>	OK
A.4.7. Does the programme make provisions for meeting training and maintenance needs?	/1/ /B04/	DR, CC	As required by Annex 3 to EB65, the CME shall develop <u>and implement</u> a management system which must include records for arrangements for training and capacity development of personnel. However, in Section A.4.4.1. of the PoA-DD is being referred to the <b>development</b> of a management system based on Annex 3 to EB63. Hence a CAR has been raised. Moreover, as stated in Section A.4.4.1. of the PoA-DD, a management system has been developed and not as according to the latest Standard implemented. Hence a CL has been raised.	<del>CAR 5 &amp; CL 3</del>	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

			<p>CAR 5: In Section A.4.4.1. of the PoA-DD is being referred to the development of a management system as per standard EB63 Annex 3. This is not the latest version.</p> <p>CL 3: The project participant is requested to clarify whether the management system, as required by Annex 3 to EB65, has been implemented.</p>		<p>OK</p> <p>OK</p>
A.5. Contribution to Sustainable Development: <i>The project/programme's contribution to sustainable development is assessed.</i>					
A.5.1. Has the host Party confirmed that the programme assists it in achieving sustainable development?	/01/	CC	<p>A Letter of Approval, issued by the DNA of the host Party, has not been submitted to the DOE for validation. Hence depending on closure of CAR 1 in section A.1.1. above.</p> <p>Refer CAR 1 in section A.1.1. above.</p>	<del>Refer CAR 1</del>	OK
A.5.2. Will the programme create other environmental or social benefits than GHG emission reductions?	/01/	DR	<p>As stated in Section A.2. of the PoA-DD, the main benefits of the implementation of the PoA are: (1) job-creation (2) increased tax revenues (3) increased foreign direct investment (4) reduction of</p>	OK	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

			emissions of harmful substances associated with the combustion of fossil fuels (5) reduced utilisation of water.		
A.6. Operational, management and monitoring plan for the programme					
A.6.1. Do the operational and management arrangements established by the coordinating entity include a record keeping system for each CPA under the programme?	/1/ /B04/ /07/	DR, CC	As required by Annex 3 to EB 65, the CME shall develop and implement a management system including A clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies; records of arrangements for training and capacity development for personnel; procedures for technical review of inclusion of CPAs; a procedure to avoid double counting; a records and documentation control process for each CPA under the PoA; measures for continuous improvements of the PoA management system; and any other relevant elements.  These requirements have not been met. Hence a CAR has been raised.	<del>CAR 6</del>	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

			CAR 6: The Management System developed by the CME and made available to the DOE at the time of validation, does not conform to the requirements as laid down in paragraph 17 of EB65 Annex 3.		
A.6.2. Do the operational and management arrangements established by the coordinating entity include a system/procedure to avoid including CPAs that have already been registered either as CDM project activity or as a CPA of another PoA?	/07/, /01/	DR, CC	Refer section A.6.1. above, hence depending on closure of CAR 6.	<del>Refer CAR 6</del>	OK
A.6.3. Do the operational and management arrangements established by the coordinating entity include provisions to ensure that CPA implementers are aware and have agreed that their activity is being subscribed to the PoA?	/07/, /01/	DR, CC	Yes, the Management System includes provisions to ensure that CPA implementers are aware and have agreed that their activity is being subscribed to the PoA.	OK	OK
A.6.4. Does the monitoring plan include a description of a proposed statistically sound sampling method and procedure to be used by designated operational entities for verification of GHG emission reductions by CPAs under the programme?	/07/, /01/	DR	As stated in Section A.4.4.2. of the PoA-DD, each CPA will be individually monitored, hence a sampling method is not proposed.	OK	OK
A.6.4.1. If the programme does not use verification method that applies a statistical method for sampling, has a system been defined to avoid double counting of CERs, and is the system transparent?	/07/, /01/	DR	Depending on the closure of CAR 6 in section A.6.1. above.	<del>Refer CAR 6</del>	OK
These systems include:					



# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

1. Records will be maintained by coordinating entity of all existing power generation unit under the CPA. There will be a cross-check done before adding a new CPA.	/07/, /01/	DR	Depending on the closure of CAR 6 in section A.6.1. above.	Refer CAR 6	OK
2. The undertaking will be taken from all operators to confirm that project is not part of any other CDM project activity or any other PoA.	/07/, /01/	DR	Depending on the closure of CAR 6 in section A.6.1. above.	Refer CAR 6	OK
<b>B. Duration of the Programme of Activities</b>					
B.1.1. Has the programme starting date been clearly defined and evidenced?	/01/	DR, CC	In Section B.1. of the PoA-DD it is stated that the start date of the PoA is 05/04/2012 as being the expected date of publishing of the PoA for global stakeholder comments.	OK	OK
B.1.2. Does the PoA design documentation confirm that the length of the PoA does not exceed 28 years?	/01/ /B04/	DR, CC	As stated in Section B.2. of the PoA-DD, the length of the PoA is 28 years and zero months, thus not exceeding the maximum period of 28 years.	OK	OK
<b>C. Environmental Impacts: Documentation on the analysis of the environmental impacts will be assessed, and if deemed significant, an EIA should be provided to the validator. (Analysis at PoA/CPA level).</b>					
This section must only be completed if the analysis of environmental impacts is at PoA level.					
C.1. Has an analysis of the environmental impacts of the programme been sufficiently described?	/01/ /02/ /03/	DR, CC	As stated in Section C.1. of the PoA-DD the environmental analysis is done at CPA level. Hence the checklist question is not applicable.	N/A	OK
C.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA)?	/01/	DR, CC	A Basic Assessment is required for the construction of facilities or infrastructure for the	OK	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

			<p>generation of electricity where:            (a) the electricity output is more than 10 MW but less than 20 MW; or (b) the output is 10 MW or less but the total extent of the facility covers an area in excess of 1 hectare.</p> <p>The construction of facilities or infrastructure for the generation of electricity where the electricity output is 20 MW or more, requires a Scoping Assessment and EIA.</p>		
C.3. Will the programme create any adverse environmental effects?	/01/	DR	As stated in Section C.1. of the PoA-DD the environmental analysis is done at CPA level. Hence the checklist question is not applicable.	N/A	OK
C.4. Are transboundary environmental impacts considered in the analysis?	/01/	DR	As stated in Section C.1. of the PoA-DD the environmental analysis is done at CPA level. Hence the checklist question is not applicable.	N/A	OK
C.5. Have identified environmental impacts been addressed in the programme design?	/01/	DR	As stated in Section C.1. of the PoA-DD the environmental analysis is done at CPA level. Hence the checklist question is not applicable.	N/A	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

C.6. Does the programme comply with environmental legislation in the host country?	/01/	DR	Depending on the closure of CL 1 in section A.3.2. above.	Refer CL 1	OK
<b>D. Stakeholder Comments: <i>The validator should ensure that stakeholder comments have been invited with appropriate media and that due account has been taken of any comments received. (Consultation at PoA ./CPA level).</i></b>					
This section must only be completed if the analysis of environmental impacts is at PoA level.					
D.1. Have relevant stakeholders been consulted	/01/ /02/ /03/	DR	As stated in Section D.1. of the PoA-DD, the Local Stakeholder Consultation is done at CPA level.	N/A	OK
D.2. Have appropriate media been used to invite comments by local stakeholders?	/01/ /02/ /03/	DR	As stated in Section D.1. of the PoA-DD, the Local Stakeholder Consultation is done at CPA level.	N/A	OK
D.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	/01/ /02/ /03/	DR	As stated in Section D.1. of the PoA-DD, the Local Stakeholder Consultation is done at CPA level.	N/A	OK
D.4. Is a summary of the stakeholder comments received provided?	/01/ /02/ /03/	DR	As stated in Section D.1. of the PoA-DD, the Local Stakeholder Consultation is done at CPA level.	N/A	OK
D.1.5. Has due account been taken of any stakeholder comments received?	/01/ /02/ /03/	DR	As stated in Section D.1. of the PoA-DD, the Local Stakeholder Consultation is done at CPA level.	N/A	OK
<b>E. Programme Baseline: <i>The validation of the programme baseline establishes whether the selected baseline methodology is appropriate and whether the selected baseline represents a likely a baseline scenario.</i></b>					

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

E.1. Baseline Methodology: <i>It is assessed whether the programme applies an appropriate baseline methodology.</i>					
E.1.1. Does the programme apply an approved methodology and the correct version thereof?	/1/ /B02/ /B06/	DR, CC	<p>As stated in Section E.1. of the PoA-DD, the Approved Baseline and Monitoring Methodology for Large Scale CDM Project Activities, ACM0002 "Consolidated baseline methodology for grid- connected electricity generation from renewable sources" has been applied.</p> <p>However, as stated in the PoA-DD, it is version 12.2.0, as of 25/11/2011, that has been applied, whereas at the time of GSCP (05/04/2012 – 04/05/2012), version 12.3.0 as of 02/03/2012 was available. Therefore the applied version is incorrect. Hence a CAR has been raised.</p> <p>CAR 7: The version of the methodology applied throughout the PoA-DD is not the latest version.</p>	<del>CAR 7</del>	OK
E.1.2. Are the applicability criteria in the baseline methodology all fulfilled (refer below)?			Depending on the closure of CARs 8, 9 & 10	<del>Refer CAR 8, 9 &amp; 10</del>	OK
Criterion 1 – ACM0002 / Version 12.3.0  This methodology is applicable to grid-connected	/1/ /B02/	DR, CC	As stated in Section E.2. of the PoA-DD, CPAs under this PoA will involve either a greenfield	OK	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

<p>renewable power generation project activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).</p>			<p>plant or a capacity addition, which meets the requirement as laid down in Chapter I of ACM0002, version 12.3.0.</p>		
<p>Criterion 2 – ACM0002 / Version 12.3.0</p> <p>This methodology is applicable under the condition that the project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit.</p>	<p>/1/ /B02/</p>	<p>DR, CC</p>	<p>As stated in Table E.2-1 of Section E.2. of the PoA-DD, CPAs under this PoA involve either the installation or capacity addition of a solar power plant, which meets the requirement as laid down in Chapter I of ACM0002, version 12.3.0.</p>	<p>OK</p>	<p>OK</p>
<p>Criterion 3 – ACM0002 / Version 12.3.0</p> <p>This methodology is applicable under the condition that in the case of capacity additions, retrofits or replacements (except for capacity addition projects for which the electricity generation of the existing power plant(s) or unit(s) is not affected): the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity addition or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.</p>	<p>/1/ /B02/</p>	<p>DR, CC</p>	<p>As the CPAs under this PoA involve solely the installation and capacity additions of solar power plants, this criterion is not applicable.</p>	<p>OK</p>	<p>OK</p>

# VALIDATION REPORT

CDM Validation report NO CCL0026/SAGCSP/02042012

<p>Criterion 4 &amp; 5 of ACM0002 / Version 12.3.0 are only relevant for project activities that involve hydro power plants.</p>	<p>/1/ /B02/</p>	<p>DR, CC</p>	<p>As described in section E.2. of the PoA-DD, hydro power plants are not eligible for a CPA under this PoA, hence the criteria are not relevant.</p>	<p>OK</p>	<p>OK</p>
<p>Criterion 6 – ACM0002 / Version 12.3.0</p> <p>This methodology is not applicable to:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity;</li> <li><input type="checkbox"/> biomass fired power plants;</li> <li><input type="checkbox"/> a hydro power plant that results in the creation of a new single reservoir or in the increase in an existing single reservoir where the power density of the reservoir is less than 4 W/m<sup>2</sup>.</li> </ul>	<p>/1/ /B02/</p>	<p>DR, CC</p>	<p>As stated in Table E.2-1 of Section E.2. of the PoA-DD, switching from fossil fuels to renewable energy is not allowed under this PoA; biomass fired power plants and hydro power plants are not eligible for a CPA under this PoA, thus criterion 6 of ACM0006 has been met.</p>	<p>OK</p>	<p>OK</p>
<p>Criterion 7 – ACM0002 / Version 12.3.0</p> <p>In the case of retrofits, replacements or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is “the continuation of the current situation, i.e. to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance”.</p>	<p>/1/ /B02/</p>	<p>DR, CC</p>	<p>Capacity addition is one of the types of CPAs eligible for CPA inclusion. However evidence for compliance to the applicability-criterion 7, as stated left: “plausible baseline scenario”, has not been provided. Hence a CAR has been raised.</p> <p>CAR 8: evidence for compliance to the applicability-criterion 7, as stated left: “plausible baseline</p>	<p><del>CAR 8</del></p>	<p>OK</p>

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

			scenario”, has not been provided.		
<p>Criterion 8 – Annex 19 to EB 63 “Tool to calculate the emission factor for an electricity system”</p> <p>This tool is applicable to project activities that supply electricity to a grid or to project activities that result in savings of electricity that would have been provided by the grid.</p>	/1/ /B01/ /B02/	DR, CC	<p>As required by paragraph 71 of Annex 1 to EB55, the CME has not demonstrated that the project activity meets each of the applicability conditions of the approved methodology or any tool or other methodology component referred to therein. Hence a CAR has been raised.</p> <p>CAR 9: The CME has not demonstrated that the project activity meets each of the applicability conditions of the approved methodology or any tool or other methodology component referred to therein.</p>	<del>CAR 9</del>	OK
<p>Criterion 9 – Annex 19 to EB 63 “Tool to calculate the emission factor for an electricity system”</p> <p>This tool is not applicable if the project electricity system is located partially or totally in an Annex I country.</p>	/1/ /B02/ /B03/	DR, CC	<p>In Section E.6.2. of the PoA-DD, the national grid of the RSA has been defined as a project electricity system by default. Hence the project electricity system is located entirely in a non-Annex 1 country. Thus the applicability condition has been met.</p>	OK	OK
<p>Criterion 10 – Annex 11 to EB 41 “Tool to calculate</p>	/1/ /B02/ /B03/	DR,	All tools as referred to in the	<del>CAR 10</del>	OK



# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

<p>project or leakage CO<sub>2</sub> emissions from fossil fuel combustion”</p> <p>This tool is applicable to project activities where CO<sub>2</sub> emissions from fossil fuel combustion are calculated based on the quantity of fuel combusted and its properties</p>		CC	<p>applied methodology have not been evaluated to be applicable. Hence a CAR has been raised.</p> <p>CAR 10: The “Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion” has not been evaluated for applicability.</p>		
<p><i>E.2. Baseline Scenario Determination: The choice of the baseline scenario will be validated with focus on whether the baseline is a likely scenario, and whether the methodology to define the baseline scenario has been followed in a complete and transparent manner.</i></p>					
<p>E.2.1. What is the baseline scenario?</p>	/1/ /B02/	DR, CC	<p>As stated in Section E.4. of the PoA-DD and as per ACM0002, a baseline scenario has been identified for each type of CPA:</p> <p>The CPA is the installation of a new grid connected solar park at a site where no solar park was operated period to the implementation of the project activity: the baseline scenario is the electricity delivered to the grid by the solar park would have otherwise been generated by the operation of Eskom’s grid-connected power plants and by the addition of new generation sources that is reflected in the CM</p>	OK	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

			<p>calculations.</p> <p>The CPA is the capacity addition of an existing grid connected solar park: the baseline is in the absence of the CPA, the existing facility would continue to supply electricity to the grid at historical levels, until the time at which the generation facility would likely be replaced or retrofitted (DATEBaselineRetrofit). Electricity delivered to the grid by the capacity addition(s) of the solar park would have otherwise been generated by the operation of Eskom's grid- connected power plants and by the addition of new generation sources that is reflected in the CM calculations.</p>		
E.2.2. What other alternative scenarios have been considered and why is the selected scenario the most likely one?	/1/ /B02/	DR, CC	No other alternative scenarios have been considered, as per ACM0002 the baseline scenarios as described in Section E.4. of the PoA-DD in the section E.2.1. above are the only options applicable for the types of CPAs included under the PoA-DD.	OK	OK
E.2.3. Has the baseline scenario been determined	/1/ /B02/	DR,	Yes, the baseline scenarios	OK	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

according to the methodology?		CC	have been determined in accordance with methodology ACM0002.		
E.2.4. Has the baseline scenario been determined using conservative assumptions where possible?	/1/ /B02/ /B03/	DR, CC	The baseline scenarios have been determined in accordance with methodology ACM0002 and calculations have been done according to the "Tool to calculate the emission factor for an electricity system", hence a conservative approach has been adopted.	OK	OK
E.2.5. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	/1/ /B02/	DR, CC	A grid as a baseline scenario has been considered which is in line with the national and/or sectoral policies, macro-economic trends and political aspirations.	OK	OK
E.2.6. Is the baseline scenario determination compatible with the available data and are all literature and sources clearly referenced?	/1/ /B02/	DR, CC	Yes, the baseline scenario is compatible with the data available in the public domain for which literature and sources are clearly referenced.	OK	OK
E.2.7. Have the major risks to the baseline been identified?	/1/ /B02/	DR, CC	No major risks have been identified.	OK	OK
<b>E.3. Additionality of the Programme of Activities</b>					
E.3.1. Has it been demonstrated that the programme is a voluntary coordinated action that would not be	/1/	DR	In Section A.4.3. of the PoA-DD it has been stated that the	GL4	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

implemented in the absence of CDM?			<p>proposed PoA is a voluntary action. However it has not been described whether it is a voluntary coordinated action. Hence a CAR has been raised.</p> <p>CL 4: The CME is requested to clarify in Section A.4.3. that the proposed PoA is a voluntary coordinated action that would not be implemented in the absence of CDM.</p>		
E.3.2. If the programme is implementing a mandatory policy/regulation, has it been demonstrated whether the policy/regulation is being enforced? If it is enforced, has it been demonstrated that the programme will lead to a higher level of enforcement?			See section E.3.1. above: the programme is not implementing a mandatory policy/regulation, hence this checklist-question is not relevant.	N/A	OK
E.3.3. Are all assumptions stated in a transparent and conservative manner?	/1/ /B02/,/B04/	DR	As stated in Section E.5.1. of the PoA-DD and as per ACM0002, the additionality is demonstrated according to the "Tool for the demonstration and assessment of additionality" and assumptions have been stated in a transparent and conservative manner.	OK	OK
E.4. Additionality of CPAs					

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

E.4.1. Is the approach described for demonstrating additionality of a CPA in accordance with the procedure provided in the baseline and monitoring methodology?	/1/ /B02/,/B04/	DR, CC	<p>The additionality has not been described in a convincing and conclusive manner and hence not verifiable. Hence a CAR has been raised.</p> <p>CAR 11: The additionality has not been described in a convincing and conclusive manner and hence not verifiable.</p>	CAR 11	OK
E.4.2. Are specific criteria for demonstrating the additionality of a specific CPA included in the PoA?	/1/ /B02/,/B04/		Refer section E.4.1. above, hence depending on closure of CAR 11.	Refer CAR 11	OK
E.5. Calculation of GHG Emission Reductions – Project emissions: <i>It is assessed whether the procedure for calculating project emissions is according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.</i>					
E.5.1. Has the procedure to calculate project emissions of an individual CPA been documented according to the approved methodology and in a complete and transparent manner?	/1/ /B02/	DR, CC	<p>According to ACM0002, project emissions for most renewable power generation activities, including solar power plants that do not use fossil fuels for electricity generation, are equal to zero.</p> <p>However it was mentioned that CSP project activities which make use of auxiliary equipment may be eligible to be included into the PoA, but it has not been clearly described how in those cases project</p>	CL-5	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

			emissions are accounted for. Hence a CL has been raised.  CL 5: PP is requested to clarify how Project Emissions are accounted for.		
E.5.2. Have conservative assumptions been used when determining the procedure to be used to calculate the project emissions?	/1/ /B02/	DR	Refer section E.5.1. above. Hence depending on closure of CL 5.	Refer CL-5	OK
E.5.3. Are uncertainties in the project emission calculation procedure properly addressed?	/1/ /B02/	DR	Refer section E.5.1. above. Hence depending on closure of CL 5.	Refer CL-5	OK
E.6. Calculation of GHG Emission Reductions – Baseline emissions: <i>It is assessed whether the procedure for calculating baseline emissions is according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.</i>					
E.6.1. Has the procedure to calculate baseline emissions of an individual CPA been documented according to the approved methodology and in a complete and transparent manner?	/1/ /B02/,/B04/	DR, CC	Yes, the calculations have been documented according to the approved methodology ACM0002 and in a complete and transparent manner.	OK	OK
E.6.2. Have conservative assumptions been used when determining the procedure to be used to calculate the baseline emissions?	/1/ /B02/,/B04/	DR, CC	As demonstrated in Section E.6.2. of the PoA-DD, and as per the applied methodology and tool, the combined margin CO <sub>2</sub> emission factor for grid connected power generation has been calculated using conservative values as the input parameters.	OK	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

E.6.3. Are uncertainties in the baseline emission estimates properly addressed?	/1/ /B02/,/B04/	DR, CC	Uncertainties in estimation of the baseline scenario have not been identified.	OK	OK
E.7. Calculation of GHG Emission Reductions – Leakage: It is assessed whether the procedure for calculating leakage is according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.					
E.7.1. Has the procedure to calculate leakage emissions of an individual CPA been documented according to the approved methodology and in a complete and transparent manner?	/1/ /B02/	DR, CC	As per ACM0002, no leakage emissions are considered.	OK	OK
E.7.2. Have conservative assumptions been used when determining the procedure to be used to calculate the leakage emissions?	/1/ /B02/	DR, CC	Refer section E.7.1. above.	OK	OK
E.7.3. Are uncertainties in the leakage emission estimates properly addressed?	/1/ /B02/	DR, CC	Refer section E.7.1. above.	OK	OK
E.8. Emission Reductions: the emission reductions shall be real, measurable and give long-term benefits related to the mitigation of climate change.					
E.8.1. Does the PoA-DD provide a clear and correct way of calculating the emission reductions from each CPA?	/1/ /B02/,/B04/	DR, CC	Emission reductions are calculated according to the applied methodology ACM0002 which is being demonstrated in a clear and correct way in Section E.6.2. of the PoA-DD. I.e. procedures have been correctly applied, selection between options provided by the methodology have been explained and formulae/ equations have been correctly	OK	OK



# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

			presented.		
E.9. Monitoring Methodology: It is assessed whether the project applies an appropriate monitoring methodology.					
E.9.1. Is the monitoring plan documented according to the approved methodology and in a complete and transparent manner?	/1/ /B02/	DR, CC	<p>As required by paragraph 53 of the CDM M&amp;P, the monitoring plan must be part of the PoA-DD.</p> <p>As described in Section E.7.2. of the PoA-DD, the monitoring plan is in accordance with the approved methodology ACM0002. However the period for archiving of data is not as per ACM0002. Hence a CAR has been raised.</p> <p>CAR 12: The period for archiving of data collected as part of the monitoring plan is not as per the approved methodology ACM0002: "at least 2 years after the end of the LAST crediting period".</p>	CAR 12	OK
E.9.2. Is the list of parameters that are to be reported in CDM-CPA-DD form complete?	/1/ /B02/	DR, CC	<p>Section E.6.3. of the PoA-DD is not complete with respect to parameters like EFgrid, CM,y . Hence a CAR has been raised.</p> <p>CAR 13: The list of parameters that are</p>	CAR 13	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

			to be reported in CDM-CPA-DD form is not complete.		
E.9.3. Will all monitored data required for verification and issuance be kept for two years after the end of the crediting period or the last issuance of CERs, for this programme, whichever occurs later?	/1/ /B02/	DR, CC	Refer section E.9.1. above, hence depending on closure of CAR 12.	Refer CAR 12	OK
E.10. Monitoring Plan: It is established whether the monitoring plan provides for reliable and complete emission data over time.					
E.10.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the programme boundary during the crediting period?	/1/ /B02/	DR, CC	Yes, as described in Section E.7.2. of the PoA-DD, the monitoring plan does provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the programme boundary during the crediting period.	OK	OK
E.10.2. Are the choices of programme GHG indicators reasonable and conservative?	/1/ /B02/	DR, CC	The CM, derived from OM and BM are the programme GHG indicators which determine the Emission Factor. Calculation thereof has been carried out as per the tool, hence the choices are reasonable and conservative.	OK	OK
E.10.3. Is the measurement equipment described and deemed appropriate?	/1/ /B02/	DR, CC	As described in Section E.7.2. of the PoA-DD, the quantity of net electricity generation that is produced and fed into the grid	OK	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

			by the CPA in the year y shall be determined on the basis of electricity meters. The metering instruments shall be installed according to the requirements of the Grid and the Distribution Metering Codes.		
E.10.4. Is the measurement accuracy addressed and deemed appropriate? Are procedures in place on how to deal with erroneous measurements?	/1/ /B02/	DR, CC	As described in Section E.7.2. of the PoA-DD, readings of the electricity meters shall be cross-checked with records for sold electricity.	OK	OK
E.10.5. Is the measurement interval identified and deemed appropriate?	/1/ /B02/	DR, CC	As described in Section E.7.2. of the PoA-DD, the quantity of net electricity generation supplied by the project plant/unit to the grid shall be measured continuously and recorded at least monthly, as per ACM0002.	OK	OK
E.10.6. Is the registration, monitoring, measurement and reporting procedure defined?	/1/	DR	The description of the monitoring plan in Section E.7.2. of the PoA-DD does not clearly describe whether a procedure for the registration, monitoring, measurement and reporting has been defined as part of the monitoring plan.	OK	OK
E.10.7. Are procedures identified for maintenance of	/1/	DR	Electricity meters will be	OK	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

monitoring equipment and installations? Are the calibration intervals being observed?			calibrated according to SABS.		
E.10.8. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation):	/1/ /B04/	DR, CC	Meters are installed and a procedure is in place for data, recoding, storage and archiving.	OK	OK
E.11. Monitoring of Sustainable Development Indicators/Environmental Impacts: It is assessed whether choices of indicators are reasonable and complete to monitor sustainable performance over time.					
E.11.1. Is the monitoring of sustainable development indicators/ environmental impacts warranted by legislation in the host country	/1/ /B06/	DR, CC	The monitoring of sustainable development indicators is not a requirement as per the South African legislation.	OK	OK
E.11.2. Does the monitoring plan provide for the collection and archiving of relevant data concerning environmental, social and economic impacts?	/1/	DR	Inclusion of a CPA with negative environmental impacts is only eligible when the monitoring plan provides for monitoring of the measures taken to control the negative environmental impact. Hence a CL has been raised.  CL 6: It is not evident if CPA has provided for the collection and archiving of relevant data concerning environmental, social and economic impacts in its monitoring plan (if any).	CL-6	OK
E.11.3. Are the sustainable development indicators in	/01/	DR,	Yes, as stated in Section A.2. of	Refer CAR 1	OK

# VALIDATION REPORT

CDM VALIDATION report NO CCL0026/SAGCSP/02042012

line with stated national priorities in the Host Country?		CC	the PoA-DD. However this has not been confirmed and is depending on the closure of CAR 1.		
E.12. Management System and Quality Assurance for Monitoring and Reporting: It is checked that programme implementation is properly prepared for and that critical arrangements are addressed.					
E.13.1. Is the authority and responsibility of overall programme management clearly described?	/1/ /07/ /B04/	DR, CC	Depending on the closure of CAR 6 as stated in section A.6.1. above.	<del>Refer CAR-6</del>	OK
E.13.2. Are procedures identified for training of monitoring personnel?	/1/ /07/ /B04/	DR, CC	Depending on the closure of CAR 6 as stated in section A.6.1. above.	<del>Refer CAR-6</del>	OK
E.13.3. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	/1/ /07/ /B04/	DR, CC	Depending on the closure of CAR 6 as stated in section A.6.1. above.	<del>Refer CAR-6</del>	OK
E.13.4. Are procedures identified for review of reported results/data?	/1/ /07/ /B04/	DR, CC	Yes, CME will review as described in Section E.7.2. of the PoA-DD.	OK	OK
E.13.5. Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	/1/ /07/ /B04/	DR, CC, I	CME will carry out test verifications as described in Section E.7.2. of the PoA-DD.	OK	OK

# VALIDATION REPORT

CDM VALIDATION REPORT NO CCL0026/SAGCSP/02042012

**Table 2: Resolution of Clarification and Corrective Action Requests (PoA-DD)**

REQUESTS BY VALIDATION TEAM	REF TO TABLE 1	PROJECT PARTICIPANT'S RESPONSE	VALIDATION TEAM CONCLUSION
<b>CORRECTIVE ACTION REQUESTS</b>			
CAR 1: A Letter of Approval, issued by the DNA of the host Party has not been submitted to the DOE for validation.	A.1.1. A.4.3. A.4.4. A.4.6. A.5.1. E.11.3.	LoA was received and submitted to the DOE. Please refer to file <i>Annexure 2 - LoA_Solar PoA.pdf</i>	LoA from Host country DNA dated 31/10/2012 received.  CAR closed
CAR 2: The footer in the CDM-PoA-DD has been deleted thus altering the template.	A.1.2.	This has been noted and corrected by adding the missing information to the CDM-PoA-DD.	The footer has been added in line with "Programme of activities design document form (CDM-PoA-DD) - Version 01"  CAR closed
CAR 3: The PoA eligibility criteria as listed in Table A.4-2 in Section A.4.2.2. of the PoA-DD, are not verifiable and sufficiently objective and comprehensive, permitting the assessment of the inclusion of CPAs in the PoA, as required by paragraph 15 & 16 of Standard EB65 Annex 3.	A.3.1. A.3.1.1. A.3.1.2. A.3.1.3. A.3.1.4. A.3.1.5. A.3.1.6. A.3.1.7. A.3.1.8. A.3.1.9. A.3.1.10.	Table A.4-2 in Section A.4.2.2 has been modified to make the criteria verifiable and sufficiently objective and comprehensive, permitting the assessment of the inclusion of CPAs in the PoA. This has also been done in the gCPA-DD in Table B.2-1.	Each criterion has been modified in Table A.4.2 and in section A.4.2.2 in revised PoA-DD, which is found to be appropriate.  CAR closed
CAR 4: The CME has not made the additional eligibility criterion for CPA inclusion objective and verifiable as per the applicable standard (EB65 Annex 3).	A.3.2. B.1.6. of CPA-DD B.2.1.-B.2.3. of	Additional criteria were added to Table A.4-2 as per the applicable standard (EB70 Annex 5).	Additional eligibility criteria for CPA inclusion included in section A.4.2 of the revised PoA-DD which is in line with

# VALIDATION REPORT

CDM VALIDATION REPORT NO CCL0026/SAGCSP/02042012

	CPA-DD		latest applicable standard (EB 70, Annex. 5)  CAR closed
CAR 5: In Section A.4.4.1. of the PoA-DD is being referred to the development of a management system as per standard EB63 Annex 3. This is not the latest version.	A.4.7.	This information has been updated in section A.4.4.1 as follows: <i>“According to the “Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities” (Version 2.0, EB 70, Annex 5)”</i>	The latest version has been referenced and applied in revised PoA-DD.  CAR closed
CAR 6: The Management System developed by the CME and made available to the DOE at the time of validation, does not conform to the requirements as laid down in paragraph 17 of EB65 Annex 3.	A.6.1. A.6.2. A.6.4.1. E.13.1. E.13.2. E.13.3. B.7.1. of CPA-DD B.9.7.-B.9.9. of CPA-DD B.10.1., B.10.2. and B.10.4. of CPA-DD	The management system was updated as per requirements of paragraph 19 of EB70 Annex 5 and submitted to the DOE.	CME Management System has been revised in line with requirements of EB 70, Annex 5 which is found to be appropriate.  CAR Closed
CAR 7: The version of the methodology applied throughout the PoA-DD is not the latest version.	E.1.1.	The version has been updated as can be seen in section E.1: <i>“The latest version which was published before EB66 of the consolidated baseline and monitoring methodology ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” (Version</i>	The latest version has been referenced and applied in the revised PoA-DD.  CAR closed



# VALIDATION REPORT

CDM VALIDATION REPORT NO CCL0026/SAGCSP/02042012

		12.3.0) <sup>3</sup>	
CAR 8: Evidence for compliance to the applicability-criterion 7, as stated left: “plausible baseline scenario”, has not been provided.	E.1.2.	The eligibility criterion 12 has been made to address the identified issue, based on which the CPA which envisages capacity addition can only be included only if it does not affect the radiation received by the existing power plant and the electricity fed into the grid by the added power plant addition is separately metered. Thus, “plausible baseline scenario” for existing solar parks will be business as usual.	<p>Contrary to other renewable energy project, like hydro, non-Rankin thermal and wind the existence of one power generated unit is not going to affect the input and output of other generated unit. In other words for the chosen project conditions the electricity generation of CPA does not affect the generation at existing power plant.</p> <p>Also the output from the CPA is independently measured, which in line with sub-section (c) Capacity addition to an existing renewable energy power plant to Baseline emissions in Section II of the methodology, accordingly the date at which the generation facility would likely be replaced or retrofitted (<math>DATE_{BaselineRetrofit}</math>) is not to be taken into consideration (generation of electricity at the existing power plant will not be affected by the CPA). The project does not intent to include CPA for which the baseline is as per equation (8) of the applied methodology</p> <p>CAR closed</p>

<sup>3</sup> <http://cdm.unfccc.int/methodologies/PAmethodologies/approved> (this version of the methodology will be applied throughout the document.)

# VALIDATION REPORT

CDM VALIDATION REPORT NO CCL0026/SAGCSP/02042012

<p>CAR 9: The CME has not demonstrated that the project activity meets each of the applicability conditions of the approved methodology or any tool or other methodology component referred to therein.</p>	<p>E.1.2.</p>	<p>The required justification was inserted into Section E.2 of the PoA-DD</p>	<p>3 Each applicability criterion of the methodology was evaluated in Section E.2 and it demonstrated that applied methodology is applicable. In addition to this all tools referred in the methodology have been evaluated for the applicability. It was observed that both “Demonstration and assessment of additionality” tool and “Combined tool to identify the baseline scenario and demonstrate additionality” tool are refereed in the methodology which are supplementary/ complementary to each other, accordingly only additionality tool (and not combined tool) has been used.</p> <p>CAR closed</p>
<p>CAR 10: The “Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion” has not been evaluated for applicability.</p>	<p>E.1.2.</p>	<p>This tool has been evaluated in Section E.2 and found to be applicable. Formulas have been included in Section E.6.2 to calculate project emissions (based on “Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion”). More over project emissions were included into the project boundary in Section E.3, as well as monitoring parameters were introduced into Section E.7 of the PoA-DD.</p>	<p>Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion has been evaluated for applicability and applied. Necessary changes for calculation of PE and ER has been made in equations E.6-1, E.6-2, E.6-3, E.6-4 and E.6-16. The monitoring plan and its parameters have been updated.</p> <p>CAR 10 closed</p>

# VALIDATION REPORT

CDM VALIDATION REPORT NO CCL0026/SAGCSP/02042012

<p>CAR 11: The additionality has not been described in a convincing and conclusive manner and hence not verifiable.</p>	<p>E.4.1. E.4.2. B.2.1.-B.2.3. of CPA-DD</p>	<p>Section E.5.1 has been rewritten to be more convincing and conclusive.</p>	<p>Description on approach for additionality adopted modified and explicitly explained in in section E.5.1 of the revised PoA-DD.  CAR Closed</p>
<p>CAR 12: The period for archiving of data collected as part of the monitoring plan is not as per the approved methodology ACM0002: "at least 2 years after the end of the LAST crediting period".</p>	<p>E.9.1. E.9.3. B.7.2. of CPA-DD</p>	<p>The following was added to section E.7.2: <i>"All data collected as part of monitoring plan should be archived electronically and be kept at least for 2 years after the end of the LAST crediting period."</i></p>	<p>The requirement has been explicitly stated in section E.7.2 of the revised PoA-DD.  CAR closed</p>
<p>CAR 13: The list of parameters that are to be reported in CDM-CPA-DD form is not complete.</p>	<p>E.9.2.</p>	<p>Additional parameter were added to Section E.6.3</p>	<p>All ex-ante parameters for the CPA which are available at the time of validation/inclusion and remain constant throughout the crediting period has been identified and represented in Section E.6.3 of the revised PoA-DD.  CAR closed</p>
<p><b>CLARIFICATION REQUESTS</b></p>			
<p>CL 1: CME is requested to explain why the identified legal requirements, as identified in Section A.4.3., have not been evaluated prior to inclusion of CPA.</p>	<p>A.3.2. C.6.</p>	<p>The legal requirements were elaborated into eligibility criterion 10, which stays that the environmental impact assessment required by NEMA regulation shall be completed before CPA inclusion, based on which the construction permits will be granted to the CPA developer by competent authority</p>	<p>As evident from the clarification, the different stages of legal requirements are EA, followed by construction permit, followed by operation permit. The CPA at the time of inclusion may have reached any of the above 3 stages. Accordingly the earliest activity EA has been taken as the prove of compliance to legal</p>

# VALIDATION REPORT

CDM VALIDATION REPORT NO CCL0026/SAGCSP/02042012

		<p>of the RSA. The operation permits will only be received when construction is completed.</p> <p>Moreover in Section A.4.3 it was stated that In South Africa project developers that seek to privately produce electricity are free to take up any projects and to choose the type of technology as long as required permits have been obtained.</p>	<p>requirements and stated as a mandatory requirement in the eligibility criterion 10 (in case construction and operation permits are available at the time of inclusion the evidence may be considered accordingly)</p> <p>CL 1 is closed</p>
<p>CL 2: The project participant is requested to clarify in Section A.3. of the PoA-DD whether the CME is the entity that communicates with the board.</p>	A.4.2.	<p>Additional information as added to section A.3.:  <i>"BWC receives a fee for its services, manages the PoA according to the PoA management system and communicates with the CDM Executive Board."</i>            MoC dated 29/10/2012 was submitted to the DOE</p>	<p>In Section A.3 of the PoA-DD CME (Blue World Carbon Asset Management (Pty) Ltd) has been specified to communicate with the CDM EB, which is confirmed from MoC.</p> <p>CL closed</p>
<p>CL 3: The project participant is requested to clarify whether the management system, as required by Annex 3 to EB65, has been implemented.</p>	A.4.7.	<p>This has been clarified by CAR 5.</p>	<p>OK CL Closed</p>
<p>CL 4: The CME is requested to clarify in Section A.4.3. that the proposed PoA is a voluntary coordinated action that would not be implemented in the absence of CDM.</p>	E.3.1.	<p>Additional clarification was added to section A.2 point 3, as well as in section A.4.3.:  <i>"The proposed PoA is a voluntary coordinated action and initiative of BWC (the CME of this PoA). Participation under this PoA is voluntary."</i>            A declaration of voluntary action, dated 20/03/2012 was submitted</p>	<p>CME has confirmed that the proposed PoA is a voluntary coordinated action.            Based on the local expertise DOE confirms that the PoA is not mandatory as well as less than 1% of the available solar potential is exploited in the host country, hence this is not a business as usual (BaU).            Accordingly, the PoA is</p>

# VALIDATION REPORT

CDM VALIDATION REPORT NO CCL0026/SAGCSP/02042012

		to the DOE.	considered to be additional.  CL closed
CL 5: PP is requested to clarify how Project Emissions are accounted for.	E.5.1. E.5.2. E.5.3.	Formulas have been included in Section E.6.2 to calculate project emissions (based on "Tool to calculate project or leakage CO <sub>2</sub> emissions from fossil fuel combustion"). More over project emissions were included into the project boundary in Section E.3, as well as monitoring parameters were introduced into Section E.7 of the PoA-DD.	CME has anticipated likelihood of insignificant amount of fossil fuel consumption in some of the CPAs and proactively made provisions to estimate it and in case the project emissions is expected to be of the order of 0.5% a monitoring mechanism will be introduced which is line with paragraph 77 of VVM.  CL closed
CL 6: It is not evident if CPA has provided for the collection and archiving of relevant data concerning environmental, social and economic impacts in its monitoring plan (if any).	E.11.2.	The table with parameter to be monitored and determined based on issues identified during the local stakeholder consultations or EIA was inserted into Section E.7.1	Provisions have been made in monitoring plan (Section E.7.1) to consider the necessary environmental, socio-economic parameters based on the output of analysis of environmental impacts and local stakeholder consultation process.  CL closed

# VALIDATION REPORT

CDM VALIDATION REPORT NO CCL0026/SAGCSP/02042012

## Appendix B Certificate of Competence

# VALIDATION REPORT

CDM VALIDATION REPORT NO CCL0026/SAGCSP/02042012



**Pankaj Kumar**  
is hereby certified as a  
**Qualified CDM Lead Assessor**  
with Carbon Check (Pty) Ltd, under the regulations of the UNFCCC and Carbon Check's qualification criteria, in the following Technical Area/s:  
1.1, 1.2, 3.1, 4.6, 13.1  
Awarded: 30 September 2012

  
Chief Executive Officer  
Mr Adam Simcock

  
Chief Compliance Officer  
Mr Piyesh Ramtal



**Ravi Shankar**  
is hereby certified as a  
**Qualified CDM Lead Assessor**  
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, 2.1, 2.2, 3.1 & 13.1  
Awarded: 12 May 2011

  
Chief Executive Officer  
Mr Adam Simcock

  
Chief Compliance Officer  
Mr Piyesh Ramtal



**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: 31 October 2012

  
Chief Executive Officer  
Mr Adam Simcock