

PoA Title	Renewable Energy Carbon Programme for Africa (RECPA)
Real Case CPA Title	Haverfontein 82.5 MW Wind Power Project
ERM CVS Project Reference	2347.V1
Client Name	Climate Corporation Emissions Trading GmbH
Client Address	Marchetstrasse 59, Baden, A-2500, Austria

CDM Validation Report

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Version Control	Date
Version 1.0	20 August 2012 (Draft report)
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Abbreviations

BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reduction
CH ₄	Methane
CL	Clarification request
CME	Coordinating/Managing Entity
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
COP	Conference of the Parties
CPA	CDM Project Activity
CPA-DD	CPA Design Document
DNA	Designated National Authority
FAR	Forward Action Request
DOE	Designated Operational Entity
EB	Executive Board
EIA	Environmental Impact Assessment
FSR	Feasibility Study Report
GHG	Greenhouse Gas
GSP	Global Stakeholder Process
GWP	Global Warming Potential
GWh	Giga Watt hour
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
LoA	Letter of approval
MOP	Meeting of the Parties
MP	Monitoring Plan
MW/MWh	Mega Watt/Mega Watt hour
NCV	Net Calorific Value
NGO	Non-Governmental Organisation
ODA	Official Development Assistance
OM	Operating Margin
PoA	Programme of Activities
PoA-DD	Programme of Activities Design Document
PPA	Power Purchase Agreement
SCE	Standard coal equivalent
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value-added tax
VVS	CDM Validation and Verification Standard

Project/Party specific abbreviations

PV	Photovoltaic
RECPA	Renewable Energy Carbon Programme for Africa

1 PoA Information

1.1 Key information

PoA Title	Renewable Energy Carbon Programme for Africa (RECPA)
PoA Location(s)	South Africa
Host Party(ies)	South Africa
Other Party(ies)	NA
Coordinating/Managing Entity	Carbon Africa Limited
Project participants	Carbon Africa Limited Climate Corporation Emissions Trading GmbH

Methodology(ies) used	ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (version 13.0.0)
Methodological tool(s) used	Tool to calculate the emission factor for an electricity system (version 02.2.1) Tool for the demonstration and assessment of additionality (version 07.0.0)
Sectoral Scope(s) (as per http://cdm.unfccc.int/DOE/scopes.html)	Sectoral Scope 1: Energy industries (renewable - / non-renewable sources)


PoA Design Document GSP Version	Date: 29 May 2012	PoA Design Document Final Version	Date: 16 December 2012
	Version Number: 01		Version Number: 04

Starting date of the PoA	02 June 2012
Duration of the PoA	28 years

Date(s) of validation site visit	23 July 2012 – 27 July 2012
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2 Summary and Validation Opinion

PoA Title	Renewable Energy Carbon Programme for Africa (RECPA)
Name of Client	Climate Corporation Emissions Trading GmbH
Basis of validation	<p>ERM CVS based its validation work on:</p> <ul style="list-style-type: none"> • CDM approved monitoring methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (version 13.0.0) • CDM Validation and Verification Standard (version 02.0) • ERM CVS's internal CDM validation methodologies and protocols • CDM decisions and guidance issued by the CDM Executive Board • UNFCCC criteria for the Clean Development Mechanism • Host Country criteria for the Clean Development Mechanism
Responsibilities of ERM CVS	ERM CVS is responsible to provide a thorough independent third party assessment of the proposed CDM programme of activities (PoA) to ensure that the proposed CDM PoA meets all the identified and applicable criteria for registration of PoA under the CDM.
Responsibilities of Project participants	The CME is responsible for preparing the PoA-DD, real case CPA-DD, supporting documentation and providing all necessary evidences to support the information included in the PoA-DD and real case CPA-DD.
Activities performed	<p>ERM CVS conducted its activities in accordance with the CDM Validation and Verification Standard. The validation consisted of a review of project documentation, site visits, interviews with relevant personnel, cross checking information through other reliable sources and reporting. Validation work was based on a validation protocol that sets out relevant CDM requirements. Where necessary, Clarification Requests and Corrective Action Requests were raised and closed out with the CME. The validation work was subject to detailed Technical Review and assessment prior to submission.</p> <p>No component of the PoA was excluded from the validation.</p>
ERM CVS Conclusion	<p>ERM Certification and Verification Services (ERM CVS) has performed the validation of the PoA against the criteria for the Clean Development Mechanism as set out by the Conference of the Parties and the UNFCCC CDM Executive Board, and host country criteria. The validation employed standard auditing techniques, and addressed the requirements of the CDM Validation and Verification Standard.</p> <p>The Parties involved in the project fulfil the criteria for participation in the CDM, and have issued a letter of approval (LoA) for the project and authorised the Project participants. The LoA(s) of the host Party(ies) confirms the contribution of the PoA towards sustainable development.</p> <p>The validation has provided sufficient evidence to demonstrate that the PoA is not the baseline scenario, and that emission reductions would be additional to what would have taken place in the absence of the CDM project activity. Eligibility criteria are included that comply with the 'Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities' and ensure that CPAs can be appropriately included in the PoA.</p> <p>The PoA (and its generic CPA) meets the applicability criteria and correctly applies methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (version 13.0.0), and is therefore expected to result in real, measurable and long term reductions in greenhouse gas emissions.</p> <p>The monitoring plan provides for the collection and archiving of data sufficient to ensure that emission reductions can be verified at CPA level.</p>

	<p>In summary, it is the opinion of ERM CVS that the PoA as described in the PoA-DD Version 04 of 16 December 2012, meets all stated criteria of the CDM, correctly applies the methodology, and is expected to result in real, measurable and long term emission reductions.</p> <p>ERM CVS therefore requests the CDM Executive Board approves registration of the PoA.</p>
Signed on behalf of ERM CVS	
Name:	Melanie Eddis
Date:	23 December 2012

3 Introduction

3.1 Validation Objectives

The purpose of validation is to ensure a thorough, independent assessment of activities submitted for registration as a proposed CDM Programme of Activities (PoA) against the applicable CDM requirements.

The DOE is responsible for reporting the results of its assessment in a validation report and submitting this validation report, along with the supporting documents to the CDM Executive Board as part of the request for registration of a proposed CDM PoA.

The DOE also presents its opinion on the compliance of the proposed CDM PoA with the applicable CDM requirements, and only requests registration if this is a positive opinion.

In the course of validation, ERM CVS assesses additionality of the PoA; eligibility criteria for inclusion of a proposed CPA in the registered PoA; operational and management arrangements established by the coordinating/managing entity (CME) for the implementation of the PoA; applicability of an approved CDM methodology; monitoring plan (MP); Compliance with the relevant host country criteria; and Consistency between CDM-POA-DD and the PoA generic CDM-CPA-DD to be used for inclusion of a CPA in the registered PoA.

Validation Criteria

ERM CVS applies the following principles in performing its validation:

- Consistency
- Transparency
- Impartiality, independence and safeguarding against conflicts of interest
- Confidentiality

In all aspects of its work, ERM CVS ensures that the information and data reported are accurate, conservative, relevant, credible, reliable and complete.

3.2 Scope

The validation scope addresses the Programme of Activities as described in the Programme of Activities design document (PoA-DD), real case CDM Project Activity design document (real case CPA-DD) and associated documentation. The PoA-DD, real case CPA-DD and associated documentation are reviewed against the criteria and requirements stated in the CDM Validation and Verification Standard (VVS) and Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords, as well as relevant decisions made by the CDM Executive Board.

The validation scope also included an assessment of completeness and accuracy of documentation, evaluation of evidences, information and assumptions made in the PoA-DD, real case CPA-DD and supporting documentation. Findings of the validation of the real-case CPA are described in a separate CPA validation report.

3.3 Contract Review

Prior to contracting with the client, a full review of the project and the validation requirements was made. This addressed both commercial risk and project risks associated with conducting the validation activities and confirmed the availability of an appropriately qualified team to conduct the validation.

3.4 Validation Personnel

Based on ERM CVS's review of the PoA, a validation team was established that takes into account the coverage of the technical area(s), sectoral scope(s) and relevant host country experience.

Personnel who were involved in the validation of this PoA were:

Validation Team

Name	Role	CDM Requirements	Technical area	Financial Expertise	Participated in site visit?
Neringa Pumputyte	Lead Validator	Yes	Fully Competent	No	Yes
Alastair Woods	Assessor under Training	Yes	No	No	Yes
Simon Cochrane	Financial Expert	No	No	Yes	No

DOE Head Office

Name	Role	CDM Requirements	Knowledge relevant to the technical area
Ying Li	Technical Reviewer	Yes	Fully Competent

3.5 Summary of CVs of the validation personnel

Neringa Pumputyte has been working with CDM for the past 4 years, initially as a consultant and project developer and now as a validator and verifier. Neringa has carried out 5 validations as an assessor in the sectors of renewable energy, LFG, and fugitive emissions (oil and gas). Before joining ERM CVS, Neringa worked on hydro and cook stove projects as well as numerous waste handling projects as a CDM project developer. Neringa has completed the ERM CVS CDM training, as well as gold standard methodology training. Neringa also has a BSc and MSc in Geography, and an MSc in Environmental Change and Management from the University of Oxford.

Alastair Woods has nearly a year's experience in CDM having participated in two PoA validations on successful completion of the ERM CVS CDM training. Alastair studied Development Economics at the University of Cape Town and went on to complete an MSc in Carbon Management at the University of Edinburgh. He has also completed the Gold Standard training. Previously, he has interned with the environmental consultancy Trucost, as an analyst, and as an assistant coordinator for the International Green Awards.

Simon Cochrane has 1 year of CDM experience as a Financial Expert. He has worked as FE on 40 validations, including Wind, Hydro, Waste Water and LFG projects. Simon has 11 years' experience working as a financial advisor in environmental consulting. Simon is AAT qualified, and part qualified in CIMA (relevant units include Investment Appraisal).

Ying Li is an environmental engineer with extensive practical experience in the carbon market. She has worked in carbon markets since 2006 and gained extensive experience in the development and implementation of CDM projects, working in the area of project-based mechanisms. Her background includes both project validation and verification, in different sectoral scopes, including renewable energy, waste heat and gas recovery from iron and steel plants or cement plants, landfill gas combustion and utilization projects, coal mine methane, natural gas. She has developed and managed the validation/verification of number of CDM project activities, including experiences in CDM Project Design Document (PDD) development, the monitoring system building, data QA/QC, emission reduction calculation review and documentation review, where she has obtained a good understanding of technical aspects in these sectoral scopes as well as their specific CDM aspects. Ying has completed the ERM CVS CDM training and GHGMI Renewable Energy and Landfill Training. Ying also has BEng in Environmental Engineering and a MEng in Biochemical Engineering.

4 Validation Approach

In carrying out its validation work, ERM CVS has:

- (a) Determined whether the proposed PoA complies with the requirements of paragraph 37 of the CDM Modalities and Procedures (M&Ps), the applicability conditions of the selected methodology and guidance issued by the Board;
- (b) Assessed the claims and assumptions made in the PoA Design Document (PoA-DD). The evidence used in this assessment has not been limited to that provided by the project participants.

The validation was carried out in accordance with the most recent version of the VVS and relevant EB standards and guidance for PoAs. The validation process employed standard auditing techniques and undertook necessary cross-checks and follow-up actions to ascertain the correctness of the information. The validation team included staff with experience in the relevant technical areas within the sectoral scope, and included local host country expertise, sectoral knowledge, and financial expertise. The validation report and associated documents have undergone a thorough technical review by ERM CVS before being submitted to the CDM Executive Board for registration. The validation consisted of the following key stages:

- Upload of the PoA-DD and real case CPA-DD for Global Stakeholder Process (GSP), receipt of any comments from stakeholders
- Review of documentation including PoA-DD, real case CPA-DD, methodology and key supporting documents and references
- A visit to the site of the first real case CPA, including interviews with personnel responsible for developing the project
- Development of a draft validation report, identifying non-compliances including Corrective Action Requests (CARs) and Clarification Requests (CLs), taking into account findings of the GSP, desk review and site visit / interviews
- Resolution of outstanding issues (CARs and CLs) and development of a final validation report and validation opinion
- Independent technical review and report approval

4.1 Global Stakeholder Process

At the start of the validation, in accordance with the latest version of the “Procedures for processing and reporting on validation CDM project activities”, the unvalidated PoA-DD and real case CPA-DD supplied by the client were uploaded on the UNFCCC website to be available for global stakeholder review. The GSP period was from 02 June 2012 - 01 July 2012

Any comments received were evaluated by the validation team and taken into account in the course of the validation activities.

4.2 Document Review

A detailed document review of the PoA-DD, real case CPA-DD, methodology and all other associated documentation and references took place in advance of the site visit, and additional documents that were not available for the desk review were requested for review during the site visit. The document review includes:

- A review of data and information to verify the correctness, credibility and interpretation of presented information;
- Cross checks between information provided in the PoA-DD and real case CPA-DD and information from other sources, not limited to those provided by the PPs

Where the review of the PoA-DD or real case CPA-DD at the document review stage raised issues, these were further reviewed and validated through supporting documentation and cross-checking from other sources and interviewing relevant personnel involved in the PoA and real case CPA during the site visit. During the document review the project team also compared the proposed PoA with available information relating to projects or technologies similar to the proposed CDM PoA under validation. Where appropriate, the validation team assessed the appropriateness of formulae and the correctness of calculations presented by the CME. A list of all documents reviewed or referred to in the course of this validation is included in Appendix A.

4.3 Site visit and Interviews

The site visit included a tour of the real case CPA project site, which is described in a separate CPA validation report, and interviews with the CME.

Site visits and interviews provide additional and background to the PoA as well as cross checks with other documentation. Interviews were undertaken with relevant stakeholders in the host country, as well as personnel with knowledge of the PoA design and implementation. A list of interviewees, and the main topics discussed with each person can be found in appendix A.

The site visit was designed to enable the validation team to

- undertake a detailed review of additional documentation and verify the supporting documentation;
- assess the validity of the boundary, both of the PoA and CPAs;
- cross-check the validity of the information contained in the POA-DD and real case CPA-DD with other sources of information; and
- interview relevant stakeholders involved in the PoA and real case CPA as required.

4.4 Preparation of Draft Validation Report

Based on the findings of the desk review and site visit, ERM CVS prepared a draft validation report including a list of CARs and CLs, and provided this to the PPs. Where issues are identified that need to be further elaborated, researched or added to in order to confirm that the PoA meets the CDM requirements and can achieve credible emission reductions, ERM CVS identified these issues in the DVR so that they could be discussed with the PPs and concluded upon in the final validation report (FVR).

Remediation requests

Where issues were identified, ERM CVS raised one of the following remediation requests:

Clarification Request (CL): where information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

Corrective Action Request (CAR): where:

- Mistakes have been made that will influence the ability of the PoA to achieve real, measurable additional emission reductions;
- The CDM requirements have not been met; or
- There is a risk that emission reductions cannot be monitored or calculated.

Forward Action Requests (FAR): where it was necessary to highlight issues related to project implementation that require review during the first verification of the PoA. FARs shall not relate to the CDM requirements for registration.

CARs and CLs must be 'closed out' before the validation can be concluded. Close out is only possible where the PPs modify the project design, rectify the PoA-DD or provide adequate additional explanation or evidence that satisfies ERM CVS's concerns. The validation process may be halted until the CARs and CLs are addressed to the validation team's satisfaction.

4.5 Final Validation Report and Validation Opinion

The final validation report (FVR) is completed when the CARs and CLs have been closed out to the satisfaction of ERM CVS. The FVR includes the validation opinion that sets out the validation conclusion regarding the compliance of the POA with CDM requirements. Validation of the real-case CPA is reported in a separate CPA validation report.

4.6 Internal Quality Control

The process of validation and decision of the validation team has been subject to an independent Technical Review. The scope of the Technical Review process is to independently assess that all procedures have been followed, necessary requirements have been met, and all conclusions are justified. The final validation decision is based on the findings and conclusions of the validation team, assessing the compliance of the PoA with the CDM requirements, and the technical evaluation of the

independent technical reviewer. The final report is then reviewed and approved by the qualified signatory / final decision maker within ERM CVS.

5 Validation findings – Approval & Participation, Authorisation, Contribution to Sustainable Development, and Modalities of Communication

5.1 Approval & Participation

As per VVS section VII F, ERM CVS assessed whether the DNA of each Party indicated as being involved in the PoA has provided an appropriate letter of approval (LoA).

	ERM CVS has confirmed that the LoA has been issued and provides confirmation of:			
Party	Ratified Kyoto Protocol?	Voluntary Participation	Contribution to Sustainable Development	Exact project title
South Africa (Host Party)	Yes	Yes	Yes	Yes

ERM CVS received the LoA from the CME. The DOE does not doubt the authenticity of the LoA.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/CAR/ CL	Final OK/ NOT OK
5.1.1	Are LoAs in place for every host country, covering all PPs, that confirm <ul style="list-style-type: none"> ▪ Ratification of the Kyoto Protocol ▪ Voluntary Participation ▪ Reference to the precise title in the PoA-DD ▪ Contribution to sustainable development (host party only) 	<p>The LoA was not provided at the time of the site visit – CAR 1 was raised.</p> <p>The proposed project is a unilateral project when requesting for registration. Subsequently the LoA for the host party, South Africa, has been provided /2/. The LoA states that South Africa has ratified the Kyoto Protocol and participates voluntarily in CDM and this PoA. The South African LoA states that the PoA will contribute towards sustainable development and the LoA references the exact PoA title. CAR 1 was closed.</p>	CAR-1	OK
5.1.2	Is the information in the LoAs consistent with the other project documentation, including PP names, etc	<p>At the time of the site visit, this was pending CAR 1.</p> <p>The South Africa LoA /2/ was subsequently received and it correctly references the project participants, Carbon Africa Limited and Climate Corporations Emissions Trading GmbH, and correctly references the project title, Renewable Energy Carbon Programme for Africa (RECPA). The names and title are consistent with the PoA-DD and Modalities of Communication (MoC) /03/.</p>	CAR-1	OK

ERM CVS also reviewed whether the LoAs contain any additional specifications:

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/CAR/ CL	Final OK/ NOT OK
5.1.3	Does any LoA contain additional specification or conditions of the PoA? If so, are these conditions fully complied with?	<p>At the time of the site visit, this was pending CAR 1</p> <p>The South Africa LoA includes the following conditions:</p> <ul style="list-style-type: none"> • The Project (PoA) must be developed in accordance with the Project Design Document received by the DNA; 	CAR-1	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/CAR/ CL	Final OK/ NOT OK
		<ul style="list-style-type: none"> The project must obtain all relevant authorisations as required by national laws <p>The PoA design is validated in this validation report, and implementation will be confirmed during the verification. The PoA itself does not need any authorisations other than this LoA. The CPAs to be included under this POA will be checked for compliance with national regulations as part of the CPA inclusion process, and furthermore no CPA may win in the competitive bidding process for a power purchase agreement without having all necessary authorisations, as confirmed by reviewing the Qualification criteria of Tender No. DOE/001/2011/2012 /11/ (DOE here stands for Department of Energy).</p>		
5.1.4	<p>If any LoA references a specific version of the Validation Report and this version cannot be submitted, then has either of the following been submitted?</p> <ul style="list-style-type: none"> a statement indicating final LoA has not been received or an updated Validation Report 	<p>At the time of the site visit, this was pending CAR 1</p> <p>Not applicable. There is no reference to any version of the validation report in the South Africa LoA.</p>	CAR-1	OK

Conclusion

ERM CVS confirmed that the LoA has been received from the only party involved in this PoA (South Africa) /2/.

ERM CVS's validation of the approval status of the PoA confirmed that:

- The Party is a Party to the Kyoto Protocol
- Participation is voluntary
- As the Party involved is also the Host Party, the PoA contributes to the sustainable development of the country
- The title of the POA is identical in the LoA /2/ and the PoA-DD /1/.

ERM CVS therefore confirms that the LoAs are in accordance with the VVS section VII F

5.2 Authorisation

As per VVS section G, ERM CVS evaluated whether all PPs are listed in a consistent manner in section A.3 of the PoA-DD /1/ and have been appropriately authorised by a Party to the Kyoto Protocol. ERM CVS also checked the consistency of information between the PoA-DD, Letters of Approval (LoAs) and the Modalities of Communication (MoC).

PPs (list all)	Is the PP listed in Section A.3 of PDD?	Are contact details given in Appendix 1 of PDD?	Does the LoA name the authorised PP?	Is information in the MoC consistent with PDD and LoA?
Carbon Africa Limited (also CME)	Yes	Yes	Yes	Yes
Climate Corporation Emissions Trading GmbH	Yes	Yes	Yes	Yes

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/CAR/CL	Final OK/ NOT OK
5.2.1	Is the correct information provided on PPs, and consistently applied in section A and Appendix 1 of the PoA-DD and other project documentation (Letters of Approval and Modalities of Communication)?	<p>At the time of the site visit and draft report, the MoC had not been provided – CAR 2 was raised</p> <p>The MoC was subsequently provided to ERM CVS and reviewed by the validation team /3/. The MoC form was filled in correctly. CAR 2 was closed.</p> <p>The contact details of the project participant Climate Corporation Emissions Trading GmbH were not included in Appendix 1 of the PoA-DD. CAR 3 was raised.</p> <p>The contact details of the project participant Climate Corporation Emissions Trading GmbH have now been correctly included in Appendix 1 of the revised PoA-DD /1/. CAR 3 was closed.</p> <p>Consistency with the LoA and MoC could not be checked at draft report stage as the LoA and MoC had not been provided – please see CAR 1 and CAR 2</p> <p>Following receipt of the LoA and MoC, ERM CVS confirmed that the correct information on PPs, and the correct project title, is provided in the MoC /3/, the LoA /2/, and section A and Appendix 1 of the PoA-DD /1/.</p>	<p>CAR-3</p> <p>CAR-2</p> <p>CAR-1</p>	OK
	Can it be confirmed that there are no entities other than those approved as PPs included in section A or Appendix 1 of the PoA-DD.	<p>At the time of the site visit and draft report, this was pending closure of CAR 2.</p> <p>Based on interviews on site and document review, ERM CVS can confirm that there are no entities other than the PPs, Carbon Africa Limited and Climate Corporation Emissions Trading GmbH, which have been included in either Section A.3 or Appendix 1 of the PoA-DD /1/.</p>	CAR-2	OK
	Does the host party wish to be considered a Project Participant? If so, is this correctly presented in the PDD?	<p>At the time of the site visit and draft report, this was pending closure of CAR 1</p> <p>ERM CVS confirms that the host party does not wish to be considered a Project Participant, based on the LoA /2/ from South Africa. This is correctly presented in the PoA-DD /1/ in Section A.4.</p>	CAR-1	OK

Conclusion

All PPs to the PoA have been approved by a party to the Kyoto Protocol, and ERM CVS has reviewed the letters of approval to confirm this. The PPs are listed in a consistent manner in the PoA-DD and all related project documentation, including the LoAs and Modalities of Communication. No entities other than those approved as PPs are included in section A.3 or Appendix 1 of the PoA-DD.

5.3 Contribution to Sustainable Development

As per VVS section H, ERM CVS evaluated whether the letter of approval by the DNA of the host Party confirms the contribution of the proposed CDM project activity to the sustainable development of the host Party.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
5.3.1	Does the LOA from the Host Party confirm that the project activity contributes to the sustainable development of that country?	<p>At the time of the site visit and draft report, the LoA were not yet provided – please see CAR 1</p> <p>Subsequently the LoA has been provided and reviewed. The Host Party, South Africa, confirm in the LoA /2/ that the project activity supports sustainable development in South Africa.</p>	CAR-1	OK

5.4 Modalities of Communication

As per VVS section I, ERM CVS validated that the MoC statement has been correctly completed and duly authorised. ERM CVS also validated the corporate identity of all project participants and focal points included in the Modalities of Communication

(MoC) statement, as well as the personal identities, including specimen signatures and employment status, of their authorized signatories (VVS para 53).

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/CAR/ CL	Final OK/ NOT OK
5.4.1	Are all corporate and personal details in the MoC, including specimen signatures, correct?	At the time of the site visit and draft report the MoC had not been provided – Please see CAR 2 Subsequently Modalities of Communication has been provided /3/, and ERM CVS confirmed through document review /27.a – 27.e/ and interviews onsite, that all the correct corporate and personal details, and correct specimen signatures, are included. CAR 2 was closed	CAR-2	OK
	Has the MoC statement been correctly completed, including: <ul style="list-style-type: none"> Using the latest form? All information, including annex 1, has been correctly provided? Listing all PPs? 	At the time of the site visit and draft report the MoC had not been provided – Please see CAR 2 The MoC was later provided and reviewed and CAR 2 closed. The MoC statement /3/ uses the latest available form, with all the necessary information provided, as well as the details of both the PPs.	CAR-2	OK
	Has the MoC been signed by the authorised signatories of the PP? Are the signatories consistent with the names given in Annex 1 of the MoC?	At the time of the site visit and draft report the MoC had not been provided – Please see CAR 2. The MoC was later provided and reviewed /3/. ERM CVS confirms that the MoC /3/ has been signed by the authorised signatories of both the PPs, as confirmed by reviewing documents with the corporate and personal details: <ul style="list-style-type: none"> Personal identity of director of Climate Corporation Emissions Trading GmbH and signatory of MoC was confirmed based on Passport details /27.b/. As Director and Shareholder /27.a/, the signatory is an authorized signatory. Corporate Identity of Climate Corporation Emissions Trading GmbH was confirmed based on certified translation of company information /27.a/. This document also shows the shareholders and managing director. The company details and authorised signatory are consistent with the information in the contract between ERM CVS and Climate Corporation Emissions Trading GmbH Personal identities of directors of Carbon Africa Limited and signatories of MoC were confirmed based on Passport details /27.c/ and /27.d/. One of the authorised signatories was present at the site visit. Carbon Africa Limited's Board Resolution on Authorized Signatories was reviewed to confirm that signatories are authorised to sign on behalf of the company. /27.e/ The signatories and names are consistent in Annex 1 of the MoC /3/.	CAR-2	OK

Conclusion

ERM CVS has reviewed the modalities of communication, and confirms that the latest form was used, and all the required entries filled. Corporate and personnel information was reviewed (such as identities and authorization) /27/, and compared with the signatories in Annex 1 of the MoC /3/, confirming that the signatories are authorised, currently employed, and that the approval is genuine.

6 Validation findings – GSP, PDD and Project Description

6.1 Main changes between the PoA-DD version published for GSP and the final version submitted for registration:

- Changes related to the CARs and CLs, as identified in Appendix B
- Types of generic CPAs changed from two types based on technology (wind and solar PV) to four types, where each of the technology types were split into type according to the additionality argument (first of its kind or investment analysis).
- First of its kind option was added to available options for demonstrating CPA additionality
- Version of the Tool for the demonstration and assessment of additionality changed from version 06.1.0 to 07.0.0

6.2 Global stakeholder consultation

At the start of the validation, in accordance with the latest version of the Project Cycle Procedure, the unvalidated PoA-DD and one real case CPA-DD supplied by the client were uploaded on the UNFCCC website for global stakeholder review for a period of 30 days. The global stakeholder process (GSP) period was from 02 June 2012 - 01 July 2012 on the UNFCCC website for the Global stakeholder process.

[<http://cdm.unfccc.int/ProgrammeOfActivities/Validation/DB/DXXKB9VLEA3F7Z90H8GVO6SP6W4EKR/view.html>]

The comments received were evaluated by the validation team and taken into account in the course of the validation activities, and are described below.

	Comment received (all comments were received from one person)	How comments were evaluated and taken into account
1	Inclusion criteria for CPA inclusion is not fully descriptive and adequate, must be enlarged and refined. The PoA to be webhosted for international stake holder consultations again after modifying the relevant sections. DOE should not undertake the validation of this kind of PoA's	Validation of eligibility criteria is part of validation process. Their validation is described in section 7 of this report. While the wording of some of the criteria has changed to make the clearer and verifiable, the essence has not been changed and ERM CVS does not consider it necessary to re-post the PoA-DD for GSP. The comment appears to target the type of PoA rather than this specific PoA.
2	Number of CPA's to be included is not clear and more elaborate explanation necessary. Please correct the same and webhost the project again for comments. DOE to ensure that the project is republished or international stake holder consultation process	There is no requirement in the CDM Project Standard for the CME to identify at PoA validation stage how many CPAs would be included in the PoA. Nonetheless, as part of the site visit the validation team interviewed Terra Power Solutions, current project development partner of the CME, and checked summary documentation on the portfolio. There is a portfolio of wind and solar power schemes under development, which all together prompted the project developer to seek PoA registration to compensate for regulatory uncertainty and lack of financial viability. Their compliance with eligibility criteria will be assessed at the time when their CPA-DDs are prepared and submitted for inclusion. It is not relevant to include details of other CPAs in the PoA-DD.
3	DOE must confirm the correct and conservative identification of the Baseline. Baseline must be verifiable. Identification of baseline is not clear in all situations	The comment is not clear, considering that the applied methodology specifies baseline scenario, and grid emissions factor is calculated ex-ante. The validation includes assessing if the PoA complies with the

		methodology's applicability conditions, including whether eligibility criteria are sufficient to ensure those conditions are met by each CPA.
4	Multiple site visits must be made by DOE to cross check and establish proper baselines	The comment is not clear, as baseline is electricity generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations. The CM is calculated using published data, and ERM CVS interviewed NERSA to confirm which information sources and the latest publicly available sources. It is therefore not clear what is meant by multiple visits.
5	DOE to check for appropriate positioning of the PoA with regard to technological aspects	The comment is not clear. Validation of technological aspects is described in the validation report.

As comments are generic in nature and not clear ERM CVS has contacted the person who submitted comments asking for further information and to identify how the person is related to the PoA. However, no response was received. Therefore ERM CVS considers that the comments relate to the PoA approach generally and the type of PoAs rather than this specific PoA.

6.3 Programme of Activities Design Document (PoA-DD)

As per VVS section J, ERM CVS reviewed the PoA-DD to determine whether it has been prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC website.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/CAR/ CL	Final OK/ NOT OK
6.3.1	Is the PoA-DD prepared in accordance with the latest forms and guidance by the CDM EB? http://cdm.unfccc.int/Reference/PDDs_Forms/PoA/index.html	ERM CVS can confirm that the revised PoA-DD /1/ has been checked against the Programme of Activities Design Document form available at the time the POA was submitted for validation (F-CDM-PoA-DD – version 2.0) and guidelines for completing the Programme of Activities Design Document form available on the CDM website (version 02), which are the latest form and guidance at the time of submitting for validation and are currently valid. The PoA-DD is in compliance with the template and guidelines.	OK	OK

Conclusion

ERM CVS has confirmed that the PoA-DD has been prepared in accordance with the latest form and with relevant guidance.

6.4 PoA Description

As per VVS section K, ERM CVS reviewed the description of the PoA in the PoA-DD in order to confirm the framework developed for the implementation of the PoA, and for defining a CPA under the PoA, and to evaluate whether it provides a clear and accurate description of the proposed CDM PoA and generic CPA. Validation of the PoA description was based on review of documentation, a physical inspection of the site of the first real case CPA, and interviews.

Policy/measure or stated goal of the PoA:

The purpose of the Renewable Energy Carbon Programme for Africa (RECPA) (hereafter referred as the PoA) is to support the development and implementation of large-scale wind and solar photovoltaic (PV) renewable energy projects in South Africa. This measure will displace grid-connected, fossil fuel based electricity generation through the promotion of grid-connected renewable energy based electricity generation, thereby reducing greenhouse gas (GHG) emissions.

Technologies included in the Programme of Activities are wind and solar PV. The programme focuses on greenfield renewable energy projects.

The establishment of the Programme of Activities is to help renewable energy projects in South Africa in overcoming some of the key barriers faced by projects by enhancing the financial viability of the projects and facilitating access to capital

Description of the PoA:

The geographical area of the PoA is defined by the national boundaries of the Host Country, South Africa.

CPAs under the PoA will use renewable energy technologies to generate electricity. The following CPA types will be included in the PoA:

- Greenfield wind power plants/units in South Africa applying first-of-its-kind barrier
- Greenfield wind power plants/units in South Africa applying investment analysis
- Greenfield solar PV plants/units in South Africa applying first-of-its-kind barrier
- Greenfield solar PV plants/units in South Africa applying investment analysis

A generic CPA to be included in the proposed PoA will involve the implementation and operation of a wind or solar PV power plant implemented at a site where no renewable power plant was operated prior to the implementation of the project activity. The CPAs of the proposed PoA will generate electricity, which will be fed into South Africa's national electricity grid. By replacing grid-connected fossil fuel based electricity generation, the PoA will lead to emission reductions.

The findings of our validation of the POA description in the PoA-DD are set out below.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
6.4.1 (a)	Boundary: Is the definition of the boundary for the PoA correctly stated in terms of a geographical area (e.g., municipality, region within a country, country or several countries) within which all CPAs included in the PoA will be implemented, taking into consideration all applicable national and/or sectoral policies and regulations? How was this validated?	<p>The PoA will cover the whole host country (South Africa). This was validated based on interviews with the CME and Terra Power Solutions, developer of a portfolio of solar and wind power schemes to be included as CPAs into the proposed PoA. The boundary is in line with the South African regulations on renewable energy: the relevant regulations are specific for South Africa and do not have regional differences within the country.</p> <p>However, the PoA description in the GSP PoA-DD was not clear on how applicable national and/or sectoral policies and regulations within the chosen boundary have been considered in defining the PoA boundary and its goal/stated aim. CL 1 was raised.</p> <p>The revised PoA-DD /1/ description now explains that the PoA is designed to help overcome hurdles and risks that have prevented renewable energy generation projects being implemented. It is explained that policies to promote renewable energy generation were adopted and then have been changing resulting in considerable uncertainties and associated risks. The circumstances are the same throughout the country, where this information was confirmed based on ERM CVS's local and sectoral knowledge and review of energy regulations /5 - 10//25/. CL 1 was closed.</p>	CL-1	OK
6.4.1 (b)	Policy/measure or stated goal of the PoA: Does the PoA-DD describe the policy/measure or stated goal that the PoA seeks to promote? How was this validated?	<p>Yes, section A.2 of the PoA-DD describes the stated goal of the PoA.</p> <p>Please refer to CL 1: the PoA description in the GSP PoA-DD was not clear on how applicable national and/or sectoral policies and regulations within the chosen boundary have been considered in defining the PoA boundary and its goal/stated aim.</p> <p>CL 1 was closed as the description in the revised PoA-DD has been sufficiently amended – Please see 6.4.1 (a) for further details.</p> <p>The stated goal was validated based on interviews with the CME, National Energy Regulator, and Terra Power Solutions, developer of a portfolio of solar and wind power schemes to be included as CPAs into the proposed PoA, as well as review of the South African regulations on electricity generation from renewable energy sources /5 - 10//25/. ERM CVS can confirm that policies have</p>	CL-1	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		<p>changed at least once per year, increasing risks of investing into development and implementation of renewable energy projects:</p> <ul style="list-style-type: none"> In 2009, the National Electricity Regulator for South Africa (NERSA) has proposed Renewable Energy Feed-In Tariff scheme (REFIT), which suggested tariffs for wind, solar and small hydro power projects /06/. Later in the same year, a consultation paper suggested revising the tariffs /07/, and new tariffs were adopted /08/ In 2010, new regulation was adopted, which suggested Independent Power Producers (IPP) programme for renewable energy schemes and using competitive bidding for implementing it /09/. Instead of fixed feed-in tariffs, the IPPs are invited to bid for a tariff, which should not exceed the set ceiling. In 2011, a tender was published for the implementations of the Renewable Energy IPP programme /11/ ERM CVS has confirmed during interview with NERSA that feed-in tariff scheme was abandoned. <p>Further, based on interviews with the CME, the developer of first CPA, and NERSA representatives, the IPP procurement programme suffers from delays and changes to requirements. Frequent changes to the regulations present a barrier to renewable energy developers, and the PoA is designed to help alleviate the barrier by providing a source of revenue.</p> <p>The PoA boundary is also consistent with the first real case component project activity to be included as a CPA under this PoA /1/.</p>		
6.4.1 (c)	Confirmation of voluntary action: Does the POA-DD provide confirmation that the proposed PoA is a voluntary action by the coordinating/managing entity? How was this validated?	<p>Yes, section A.2 of the revised PoA-DD includes confirmation that the proposed PoA is a voluntary action. ERM CVS has confirmed this by review of relevant host country energy regulations, as well as interviews with the National Energy Regulator of South Africa (NERSA), to confirm that renewable energy projects – solar and wind – are not mandated by any laws or regulations in the host country /05-10//25/. The Integrated Resource Plan for Electricity 2010-2030 suggests that a share of new electricity generation capacity should come from renewable energy projects, and subsequent regulations provide a framework on how independent power producers can participate by submitting bids. /11/</p>	OK	OK

Conclusion

The process undertaken to validate the accuracy and completeness of the PoA description is set out in detail above. ERM CVS has confirmed that the description in the PoA-DD /1/ provides a clear, accurate and complete understanding of the nature of the proposed CDM PoA.

Technical description of a PoA and generic CPA

The PoA involves implementing greenfield wind power projects or a greenfield solar PV projects, which would supply electricity to the South African national grid. The description of technologies and measures implemented by the PoA has been validated as follows:

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
6.4.2 (a)	<p>(i) Description: Generic CPA design</p> <p>Does the description of technologies/measures of in the PoA-DD section A.6 provide a clear, accurate and sufficiently detailed description of all relevant elements of the PoA and a generic CPA?</p>	<p>The GSP PoA-DD contained a description of technologies/measures implemented by the PoA and its CPAs. However, the description was very generic and only referred to wind and solar technology in a broad sense. This was not sufficient to provide a clear understanding of a generic CPA and what information will be specified at CPA level:</p> <ul style="list-style-type: none"> • Typical layout was not included with main equipment and installations, including key monitoring equipment • Description was not clear on what details would have to be provided for each CPA in order to provide clear description of actual CPAs • Information on technology transfer was not included <p>CL 2 was raised to address this.</p> <p>ERM CVS reviewed the revised PoA-DD /1/ and confirms that:</p> <p>a) Descriptions of the Wind power and Solar PV technologies/generic CPAs in section A.6 have been amended to include typical layout, including information regarding the typical equipment/installations and key monitoring equipment. The revised PoA-DD clearly distinguishes four types of CPAs according to the technology and additionality option</p> <p>b) Section A.6 now includes requirements for each CPA to provide the following details, which are sufficient to provide a clear description of actual CPAs:</p> <ul style="list-style-type: none"> ○ The installed capacity ○ Number and model of turbines (for wind CPAs) and solar modules and inverters (for solar PV CPAs) ○ Technical specifications of the equipment that will be installed and relevant industry standards ○ Lifetime of the equipment ○ Plant load factor including losses and electricity generation information including internal consumption and net electricity supply to the grid ○ Details about the electricity collection and transmission infrastructure ○ Details about the metering system <p>This would ensure key information is provided for each CPA to provide a clear, accurate and sufficiently detailed description of relevant elements of CPAs.</p> <p>c) A brief description of technology transfer has been included. As technology provider and arrangements may differ between the CPAs it is suitable that more detailed information is specified at CPA level.</p> <p>CL 2 was therefore closed</p> <p>After the above clarifications and corrections, the revised POA-DD /1/ provides a clear, accurate and sufficiently detailed description of all relevant elements of the PoA and generic CPAs.</p>	CL-2	OK
6.4.2 (b)	<p>Description: Existing installations</p> <p>a) If the generic CPA involves the alteration of an existing facility, installation or process, does the description</p>	<p>Not applicable. The PoA does not include CPAs that involve an alteration of existing facility.</p>	OK	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	<p>clearly state the differences resulting from the PoA compared to the pre-project situation?</p> <p>b) How has the description of the existing facility, installation or process been validated?</p> <p>c) Is the description of the existing facility, installation or process consistent with information provided in other parts of the CPA-DD such as common practice and baseline selection?</p>			

Conclusion

The description of the generic CPA-DD contains a clear description of a typical CPA that provides the reader with a clear understanding of the precise nature of the CPAs to be included in the proposed PoA. The description sufficiently covers all relevant elements, is accurate, and clearly states the differences resulting from the project activity compared to the pre-project situation.

7 Validation Findings - Eligibility Criteria for Inclusion of a CPA in a PoA

7.1 Description of Eligibility Criteria

Following guidance from the Standard for Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities /29/, ERM CVS evaluated the eligibility criteria contained in section B.2 of the PoA-DD to evaluate whether they are verifiable, sufficiently objective and comprehensive to permit the assessment of the inclusion of CPAs in the PoA. There are four sets of criteria for each type of generic CPAs:

- Greenfield wind power plants/units in South Africa applying first-of-its-kind barrier
- Greenfield wind power plants/units in South Africa applying investment analysis
- Greenfield solar PV plants/units in South Africa applying first-of-its-kind barrier
- Greenfield solar PV plants/units in South Africa applying investment analysis

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
7.1.1	Do the eligibility criteria include the geographical boundary of the CPA including any time-induced boundary consistent with the geographical boundary set in the PoA (for example, an emission factor for electricity generation is dependent on the boundaries of regional or state or sub-regional grids)? Are the relevant criteria verifiable and sufficiently objective?	Yes, the eligibility criteria in the revised PoA-DD /1/ include a criterion for all types of CPAs that CPAs must be located in the Republic of South Africa. Compliance with the criterion can be checked based on EIA report, feasibility study, and/or Record of Decision (EIA licence). The criterion is sufficiently objective and verifiable.	OK	OK
7.1.2	Do the criteria include conditions that avoid double counting of emission reductions, like unique identifications of product and end-user locations (e.g. programme logo)? Are the relevant criteria verifiable and sufficiently objective?	<p>Yes, the criteria for all types of CPAs included checks to confirm that no double counting occurs. However, in the GSP PoA-DD the section referred to a contract between CME and CPA implementer or the signed confirmation letter from the CPA implementer as the main evidence. It was not clear from the description how CME will ensure CPAs meet this eligibility criterion. CL 3 was raised.</p> <p>The revised PoA-DD /1/ states that the CME will provide cross-check records conducted by CME against information available on the UNFCCC website regarding the non-existence of similar CDM project activities or component project activities of CDM PoAs, as described in the management system, section C. This includes checking registered CDM projects and CDM PoAs with included CPAs according to information on the UNFCCC website. The CME will also confirm that there is no geographical overlap between a proposed CPA and another single CDM project or a CPA of another PoA of the same type as described in the management system, section C, i.e. by checking project map and registered CDM projects, PoAs and CPAs on the UNFCCC website. Operational and Management system is further validated in section 10 of this report.</p> <p>Each CPA of this PoA will be named uniquely by using location identifier and installed capacity as part of a CPA name.</p> <p>CL 3 was therefore closed.</p> <p>After the above clarification and revisions, the criteria for avoiding double counting (criteria 2.1-2.4) are verifiable and sufficiently objective.</p>	CL-3	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
7.1.3	Do the criteria include the specifications of technology/measure including the level and type of service, and performance specifications, including compliance with testing/certifications? Are the relevant criteria verifiable and sufficiently objective?	<p>The criteria in GSP PoA-DD included specifications that CPAs are to be implementation of a wind power project (for wind CPAs) or solar PV power project (for solar PV CPAs).</p> <p>However, it was not clear if performance specifications and compliance with testing/certifications had been considered, and what size of installations will be eligible. CL 4 was raised.</p> <p>ERM CVS reviewed the revised PoA-DD /1/ and can confirm that eligibility criteria now include performance specifications and compliance with testing/ certifications for each CPA type (criterion 3.2). The certification standards specified in the PoA-DD were validated against the Part B of the Request for qualification and proposals for new generation capacity under the IPP procurement programme /11/.</p> <p>CL 4 was closed.</p> <p>Feasibility study was suggested as the main source of evidence in GSP PoA-DD. Based on the document review for the first real case CPA and interviews on other CPAs under development, it appears Terra Power Solutions (developer of the first CPAs for this PoA) does not always undertake a document called feasibility study. CL 5 was raised to clarify what criteria the CME will apply for assessing credibility of project documentation/feasibility studies provided as evidence on compliance with eligibility criteria.</p> <p>ERM CVS reviewed the revised PoA-DD /1/ and confirmed that criteria have been included for assessing the credibility of project documentation/feasibility studies to be used as evidence for showing compliance with the PoA eligibility criteria. The requirements are considered sufficient to assess at the CPA level whether evidence is credible and objective. CL 5 is closed.</p> <p>Additionally, in the revised PoA-DD, criteria were added on minimum and maximum installed capacity, net load factor, wind speed (for wind power CPAs) and solar irradiation (for solar PV CPAs), and back-up generators.</p> <p>Criterion 3.3 on installed capacity for all types of CPAs was validated by reviewing Part B of the <i>Request for qualification and proposals for new generation capacity under the IPP procurement programme /17.2/</i>. The document states:</p> <ul style="list-style-type: none"> For wind power projects: "Projects must have a minimum installed capacity of 1 MW and, in order to limit congestion on the grid connections to the Transmission or Distribution System, have a maximum installed capacity of 140 MW for a single grid connection point assuming that the connection point can facilitate such capacity". - For solar PV projects: "Projects must have a minimum installed capacity of 1 MW and a maximum installed capacity of 75 MW for a single grid connection point". - Criterion 3.4 on net load factor for all types of CPAs was also validated by reviewing the Part B of the <i>Request for qualification and proposals for new generation capacity under the IPP procurement programme /17.2/</i>. Based on ERM CVS sectoral knowledge, these ranges of load factors are reasonable (between 16.2 and 49.6 for wind power schemes, between 10% and 25% for solar PV, and between 20% and 35% for concentrated solar photovoltaic, all based on the P50 forecast). <p>Criterion 3.5 on wind speed and solar irradiation for the wind and solar CPAs respectively was validated as follows:</p>	<p>CL-4</p> <p>CL-5</p>	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		<ul style="list-style-type: none"> - The revised PoA-DD requires wind project CPAs to have an average wind speed between 5-11 m/s at hub height based on 12 months of measurement data reported by an independent third party. The PP considered this wind speed to be representative of South Africa's context by comparing available studies. ERM CVS sector knowledge suggests that efficient wind projects are generally operating within this range of wind speeds. According to the WindPower program, for larger commercial wind turbines, a cut-in speed of 5m/s is generally considered appropriate (http://publications.jrc.ec.europa.eu/repository/bitstream/111111111/23076/1/reqno_jrc67752_final%20report%20.pdf). - The revised PoA-DD requires solar PV CPAs to have an average annual global horizontal solar irradiation between 1,800 and 2,600 kWh/m² based on data reported by an independent third party. This solar irradiation is considered as representative of the South Africa's context when compared to available reports. ERM CVS sector expert knowledge suggests that efficient solar projects are generally operating within this range of irradiation levels. Voltas Technologies, a recognized third party solar power provider in South Africa, state that the average solar irradiation in South Africa on a horizontal surface is between 1800 and 2600 kWh/m2 (http://www.voltastechnologies.co.za/index.php?option=com_content&view=article&id=53&Itemid=60). <p>The threshold values are therefore either based on the values used in the Request for qualifications and proposals for new grid capacity under the IPP programme, or on resource availability in South Africa. Since there is no large-scale operational wind farm or solar PV plant in South Africa and even whole Sub-Saharan Africa, ERM CVS agrees that it was not possible to derive data and information from the African context.</p> <p>Following these clarifications and revisions, the criteria on technology (criteria 3.1-3.6 for all CPA types) are clear, verifiable and sufficiently objective.</p>		
7.1.4	Do the criteria include conditions to check the start date of the CPA through documentary evidence? Are the relevant criteria verifiable and sufficiently objective?	<p>For all types of generic CPAs, a condition was included that the start of the CPA occurs after the start date of the validation of the PoA, and that it will be evidenced by the agreement with the turbine supplier. However, the starting date of the PoA was defined in the GSP PoA-DD as 01 January 2013, which implies that a CPA could be included that starts before the starting date of the PoA. Further, based on document review for the first real case CPA, an agreement with the turbine supplier might not yet be available at the time of CPA inclusion. CL 6 was therefore raised.</p> <p>ERM CVS reviewed the revised PoA-DD /1/ and confirms that the PoA start date has been changed to the date at which the PoA validation started (02/06/2012). This is in line with the CDM project Standard and the CDM Glossary of Terms.</p> <p>The eligibility criterion on CPA start date has been amended. The criterion states that the CPA starting date must be after the starting date of the PoA and it suggests that for any CPA, the starting date is a date when the EPC contract, contract with the turbine supplier or other type of substantial agreement (e.g. loan agreement) is signed, whichever is earlier. – the earliest of these (if separately done) will be taken as the CPA start date, which is in line with the CDM Glossary of Terms. If such contract is not yet available at the time of subsequent CPA inclusions, this by definition will mean that such CPA starts after the start date of the PoA, thus meeting the eligibility criterion. CL 6 was closed.</p> <p>Following this clarification and revision, the criterion on the starting date in the revised PoA-DD (criterion 4) is verifiable and sufficiently objective.</p>	CL-6	OK
7.1.5	Do the eligibility criteria include conditions that	The eligibility criteria include conditions to check if the general methodology applicability conditions are met. However, provisions of ACM0002 on its	CAR-4	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	ensure compliance with applicability and other requirements of single or multiple methodology/ies applied by CPAs? Are the relevant criteria verifiable and sufficiently objective?	<p>application for PoAs had not been sufficiently considered or were not clear in the GSP PoA-DD:</p> <ul style="list-style-type: none"> Not all provisions on parameters related to investment climate and ranges of costs and revenues have been considered It is not clear why conditions on installed capacity and load factor are included as part of additionality-related eligibility criteria, It is not clear on what basis the threshold values were selected. Requirement is not included that eligibility criteria related to costs, revenues and investment climate shall be updated every two years <p>CAR 4 was raised.</p> <p>ERM CVS reviewed the eligibility criteria in the revised PoA-DD /1/.</p> <p>a) ERM CVS can confirm that all the provisions related to the investment climate and ranges of costs and revenues stipulated by the methodology have been considered as part of additionality-related criteria. These criteria are further validated under question 7.1.6 below</p> <p>b) ERM CVS can confirm that the conditions relevant to installed capacity and plant load factor stipulated by the applied methodology have been included as part of eligibility criteria related to Specifications of technology/measure (please refer to question 7.1.3 above for their validation). This is in line with the Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for PoAs /29/,</p> <p>c) Further justification has been provided in the revised PoA-DD on the threshold values that are used in the definition of the eligibility criteria. The threshold values related to technology are validated under question 7.1.3 above, and the ones related to additionality are validated in section 9.4 below.</p> <p>d) The requirement to update the criteria related to the investment climate every two years has been included as part of additionality-related eligibility criteria.</p> <p>e) The criterion on methodology applicability now requires that each CPA confirms its compliance with the methodology in section D.2 of the CPA-DD. Please refer to section 8.2 for validation of methodology applicability conditions for generic CPAs.</p> <p>CAR 4 was closed.</p> <p>Following these clarifications and revisions, the criteria on methodology applicability and compliance (criteria 5 and 6) are clear, verifiable and sufficiently objective.</p>		
7.1.6	Do the eligibility criteria include conditions that ensure that CPAs meet the requirements pertaining to the demonstration of additionality (please refer to the latest approved version of the <i>Standard for demonstration of additionality, development of</i>	<p>Additionality-related criteria are set out separately in the PoA-DD.</p> <p>Eligibility criteria on additionality were not sufficiently objective and comprehensive in the GSP PoA-DD to permit the assessment whether CPAs to be included into the PoA are additional:</p> <p>a) Part of the provisions of the ACM0002 for application for PoAs have not been considered (refer to CAR 4)</p>	CAR-5	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	<i>eligibility criteria and application of multiple methodologies for Programme of Activities</i> ; Are the relevant criteria verifiable and sufficiently objective?	<p>b) It is not clear how benchmark analysis will be applied. E.g. what indicator would have to be used for financial analysis, what benchmark will be acceptable?</p> <p>CAR 5 was raised.</p> <p>ERM CVS reviewed the additionality-related eligibility criteria in the revised PoA-DD /1/.</p> <p>a) The revised eligibility criteria were checked against the provisions of ACM0002 on its application to PoAs. Please refer to question 7.1.5.</p> <p>The PoA-DD describes a framework how benchmark analysis has to be applied by CPAs that use investment analysis. The CPAs will use the pre-tax, nominal project IRR or the post-tax, nominal equity IRR as a benchmark for proving additionality. The revised PoA-DD contains detailed procedures for the calculation of the benchmark and threshold values and other conditions to be considered for calculating IRR. These procedures were checked against the Tool for the demonstration and assessment of additionality and Guidelines for the assessment of investment analysis, and validation is reported in section 9.4 of the report below. The standardized procedures will be applied to all CPAs that apply investment analysis included in the PoA. CAR 4 was closed (please refer to Question 7.1.5 above), and the revisions resolved the issues raised in CAR 5 (please refer to section 9.4), therefore CAR 5 is also closed.</p> <p>The revised PoA-DD also describes how first-of-its kind barrier can be claimed by generic CPA types that apply this barrier. The description was checked against the Tool for the demonstration and assessment of additionality – please refer to section 9.</p> <p>Following these clarifications and revisions, the DOE can confirm that eligibility criteria on additionality are sufficiently objective and comprehensive to permit the assessment whether CPAs to be included into the PoA are additional.</p>		
7.1.7	Do the eligibility criteria include, if applicable, any PoA-specific requirements stipulated by the CMEs including any conditions related to undertaking local stakeholder consultations and environmental impact analysis (See also paragraph 6 (m) of Procedures for registration of a programme of activities as a single CDM project activity and issuance of CERs for a PoA). Are the relevant criteria verifiable and sufficiently objective?	<p>Eligibility criteria include conducting local stakeholder consultation and conducting an EIA in line with the South African laws and regulations at CPA level. Local stakeholder consultation can be conducted as part of the EIA process or as a separate consultation for CDM purposes. Compliance can be checked by reviewing Record of Decision (ROD), which is EIA approval by the Department of Environmental Affairs, and records of stakeholder participation – as part of EIA process or separately.</p> <p>The criteria (7.1 and 7.2) are sufficiently objective and verifiable.</p>	OK	OK
7.1.8	Do the criteria include, where applicable, the target group (e.g. domestic/ commercial/ industrial, rural/ urban, grid-connected/off-grid) and distribution mechanisms (e.g. direct installation)? (This is to re-test the validity of assumptions made at the PoA level. For example, in a lighting efficiency application, lighting usage hours of 3.5 hours per day would be valid	<p>A target group as such is not relevant for this type of PoA. The criterion was formulated as a condition that the CPA is connected to the South Africa electricity grid. Compliance can be checked based on feasibility, grid connection documents or power purchase agreement. The criterion (criterion 9.1) is sufficiently objective and verifiable.</p>	OK	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	if the target group is residences/households. Usage hours would be different in commercial applications and vice versa), Are the relevant criteria verifiable and sufficiently objective?			
7.1.9	Do the criteria include, where applicable, the conditions related to sampling requirements for a PoA in accordance with the approved guidelines/ standard from the Board pertaining to sampling and surveys? Are the relevant criteria verifiable and sufficiently objective?	Not applicable as there will be no sampling in the PoA.	OK	OK
7.1.10	Do the criteria include, where applicable, conditions that ensure that the CPA in aggregate meets the small-scale or micro-scale threshold criteria (please refer to the latest approved version of the Guidelines for demonstrating additionality of microscale project activities and the latest approved version of the General Guidelines to SSC CDM methodologies) and remain within those thresholds throughout the crediting period of the CPA? Are the relevant criteria verifiable and sufficiently objective?	Not applicable as CPAs will not use small scale methodologies.	OK	OK
7.1.11	Do the criteria include, where applicable, the requirements for the debundling check, in case CPAs belong to small-scale (SSC) or microscale project categories (please refer to the latest approved version of the Guidelines on assessment of debundling for SSC project activities)? Are the relevant criteria verifiable and sufficiently objective?	Not applicable as CPAs will not use small scale methodologies.	OK	OK
7.1.12	Do the criteria include conditions to provide an affirmation that funding from Annex I parties, if any, does not result in a diversion of official development assistance? Are the relevant criteria verifiable and sufficiently objective?	<p>Yes, the criteria are included that no Official Development Assistance (ODA) will be diverted as a result of the CPA. Evidence required is in the form of a confirmation letter from the CPA that public funding is not used, or – if public funding is used – a letter from Annex I country confirming that it does not result in diversion of ODA.</p> <p>The criteria (criteria 8.1 and 8.2) are sufficiently objective and verifiable.</p>	OK	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
7.1.13	Does the CME have the competencies to check the features of potential CPAs and ensure that each CPA meets all requirements and eligibility criteria before inclusion in the registered PoA?	ERM CVS reviewed profile of Carbon Africa Limited /12/ and its personnel and conducted interviews with the director and project manager and is able to confirm that the CME has sufficient competencies to check the features of potential CPAs and ensure that each CPA meets eligibility criteria before inclusion in the registered PoA. For further details of the validation of the operation and management system of the CME, please refer to section 9 of the validation report.	OK	OK
7.1.14	Is the set of eligibility criteria sufficiently objective and comprehensive to permit the assessment of the inclusion of CPAs in the PoA?	<p>To be confirmed following closure of CLs 3-6 and CARs 4-5.</p> <p>As described above, the revised PoA-DD /1/ correctly addresses all the issues raised in CLs 3-6 and CARs 4-5.</p> <p>ERM CVS therefore confirms that the set of eligibility criteria is sufficiently objective, and comprehensive to permit the assessment of the inclusion of CPAs in this PoA, and meets the requirements of the Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities /29/.</p>	OK	OK

Conclusion

The list of eligibility criteria for inclusion of CPAs in the PoA comply with the “Standard for the Development of Eligibility Criteria for the inclusion of a Project Activity as a CPA under the PoA”, are verifiable and sufficiently objective to permit the assessment of the inclusion of CPAs in the PoA.

8 Validation findings – Baseline and Monitoring Methodology

ERM CVS has evaluated the baseline and monitoring methodology selected by the PPs to confirm its applicability and whether or not it has been appropriately applied in the PoA-DD.

8.1 Validity of selected methodology and methodological tools

As per VVS section L.1, ERM CVS validated that an approved and currently valid baseline and monitoring methodology (and associated methodological tools) have been applied for this proposed CDM PoA.

Baseline methodology applied	ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” (version 13.0.0)
Methodological tools applied as required by the methodology	Tool to calculate the emission factor for an electricity system (version 02.2.1) Tool for demonstration and assessment of additionality (version 7.0.0)

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.1.1	Is the number, title and version of the approved methodology clearly and correctly stated in the PoA-DD? Is the methodology within their period of validity?	ERM CVS has determined that the methodology (ACM0002 Version 13.0.0) is correctly quoted and applied in the PoA-DD by comparing with the actual text of the applicable version of the methodology available on the UNFCCC CDM website. The methodology is within its period of validity.	OK	OK
	Are all the required tools applied and fully referenced in the PoA-DD ? Are the version numbers applicable at the time of validation?	ERM CVS has determined that the methodological tools are correctly quoted and applied by comparing with the actual text of the applicable version of the tools available on the UNFCCC CDM website. The tools are within their period of validity.	OK	OK
	If applicable, has any specific guidance provided by the CDM EB relating to the applied methodology been considered?	N/a - No additional specific guidance was used in the PoA-DD nor is relevant for this PoA .	OK	OK

Conclusion

The applied methodology and associated methodological tools have been correctly described and are approved by the CDM Executive Board. All versions are currently valid.

8.2 Applicability of the selected methodology to the generic CPA

As per VVS section L.2, ERM CVS evaluated whether the selected baseline and monitoring methodology applied in the proposed PoA (generic CPA part) is applicable to the generic CPA described in the PoA-DD. This evaluation was based on a review of the PoA-DD and associated documentation and a visit to the first real case CPA proposed to be included in the PoA. ERM CVS has validated whether the applicability conditions of the methodology and relevant tools are met and whether the PoA is not expected to result in emissions other than those allowed by the methodology.

ERM CVS has assured the compliance of the generic CPA with each of the applicability conditions of the selected methodology and tools, set out in section B.2 of part II of the PoA-DD (Application of methodology):

	Applicability Conditions in methodology and/or tools	Discussed in PoA-DD (yes/no)	Applicable (Yes/No, or state that this condition is not relevant for the project)	Validation findings (including justification and substantiation of information, data and evidence).	Draft OK/ CAR/CL	Final OK/ Not OK
8.2.1	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).	Yes	Yes	<p>The applicability condition is sufficiently explained in the PoA-DD: it clearly states that the PoA covers point (a) of this methodology applicability criterion; namely, it covers the implementation of <i>greenfield</i> plants, and the CPAs must be grid-connected.</p> <p>However, the description was not clear in the GSP PoA-DD as to how it will be ensured that each CPA meets the methodology applicability criterion. CL 7 was raised.</p> <p>ERM CVS reviewed the revised PoA-DD /1/ and confirms that an eligibility criterion is now included requiring that "The CPA has confirmed its compliance with the applicability of ACM0002, version 13.0.0 in section D.2 of the F-CDM-CPA-DD". This amendment will ensure that subsequent CPAs meet the methodology applicability conditions.</p> <p>CL 7 is therefore closed.</p>	CL-7	OK
	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;	Yes	Yes	<p>The PoA will include install wind or solar PV technologies, both of which are eligible under this methodology. Please refer to CL 7: the description in the GSP PoA-DD was not clear as to how it will be ensured that each CPA meets the methodology applicability criterion</p> <p>CL 7 was closed (please see above).</p> <p>In addition, eligibility criteria on technology are in line with the methodology applicability conditions. Therefore, compliance of CPAs with this methodology applicability condition for all types of generic CPAs will be ensured by eligibility criteria 3.1-3.6 (technology).</p>	CL-7	OK
	In the case of capacity additions, retrofits or replacements (except for wind, solar, wave or tidal power capacity addition projects which use Option 2: on page 10 to calculate $EG_{PJ,y}$): 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 expansion or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project	Yes	N/a	This PoA does not include hydro power CPAs so therefore this applicability criterion is not relevant. This is correctly described in the PoA-DD.	OK	OK

	Applicability Conditions in methodology and/or tools	Discussed in PoA-DD (yes/no)	Applicable (Yes/No, or state that this condition is not relevant for the project)	Validation findings (including justification and substantiation of information, data and evidence).	Draft OK/ CAR/CL	Final OK/ Not OK
	activity;					
	<p>In case of hydro power plants at least one of the following conditions must apply:</p> <ul style="list-style-type: none"> The project activity is implemented in an existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or 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/m²; or 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/m². 	Yes	N/a	This PoA does not include hydro power CPAs so therefore this applicability criterion is not relevant. This is correctly described in the PoA-DD and is in line with the eligibility criteria.	OK	OK
	<p>In case of hydro power plants using multiple reservoirs where the power density of any of the reservoirs is lower than 4 W/m² after the implementation of the project activity all of the following conditions must apply:</p> <ul style="list-style-type: none"> The power density calculated for the entire project activity using equation 5 is greater than 4W/m²; Multiple 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; Water flow between the multiple reservoirs is not used by any other hydropower unit which is not a part of the project activity; 	Yes	N/a	<p>This PoA does not include hydro power CPAs so therefore this applicability criterion is not relevant. This is correctly described in the PoA-DD /1/.</p> <p>This is correctly described in the PoA-DD /1/ and is in line with the eligibility criteria.</p>	OK	OK

	Applicability Conditions in methodology and/or tools	Discussed in PoA-DD (yes/no)	Applicable (Yes/No, or state that this condition is not relevant for the project)	Validation findings (including justification and substantiation of information, data and evidence).	Draft OK/ CAR/CL	Final OK/ Not OK
	<ul style="list-style-type: none"> Total installed capacity of the power units, which are driven using water from the reservoirs with a power density lower than 4 W/m², is lower than 15MW; Total installed capacity of the power units, which are driven using water from reservoirs with power density lower than 4 W/m², is less than 10% of the total installed capacity of the project activity from multiple reservoirs. 					
	<p>The methodology is not applicable to the following:</p> <ul style="list-style-type: none"> 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; Biomass fired power plants; A hydro power plant that result 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/m² 	Yes	N/a	<p>This condition is not relevant to this PoA because of the following:</p> <ul style="list-style-type: none"> This PoA does not allow switching from fossil fuels to renewable energy sources, as the CPAs are required to be greenfield. This PoA does not include biomass fired power plants. This PoA does not include hydro power CPAs. <p>This is correctly described in the PoA-DD /1/ and is in line with the eligibility criteria.</p>	OK	OK
	<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>	Yes	N/a	<p>This PoA does not include retrofits, replacements, or capacity additions; therefore this applicability criterion is not relevant.</p> <p>This is correctly described in the PoA-DD and is in line with the eligibility criteria.</p>	OK	OK
	<p>Tool to calculate the emission factor for an electricity system</p> <ul style="list-style-type: none"> This tool may be 	Yes	Yes	<p>Please refer to validation of the first applicability criterion of the methodology.</p>	OK	OK

	Applicability Conditions in methodology and/or tools	Discussed in PoA-DD (yes/no)	Applicable (Yes/No, or state that this condition is not relevant for the project)	Validation findings (including justification and substantiation of information, data and evidence).	Draft OK/ CAR/CL	Final OK/ Not OK
	<p>applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity, i.e. where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid (e.g. demand-side energy efficiency projects).</p> <ul style="list-style-type: none"> In case of CDM projects the tool is not applicable if the project electricity system is located partially or totally in an Annex I country 			The second condition is not relevant, as South African grid is not connected to any of the Annex I countries' grids.		

Conclusion

The applied methodology and associated tools are fully applicable to the generic CPA and is correctly applied in the PoA-DD /1/. No greenhouse gas emissions sources were identified within the proposed generic CPA boundary as a result of the implementation of the proposed CPA which are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology.

8.3 CPA Boundary

As per VVS section L.5, ERM CVS reviewed the description of the project boundary in the PoA-DD, including the sources and gases included in the boundary of the proposed generic CPA for the purpose of calculating project and baseline emissions for the generic CPA.

Emission sources

The emissions sources included in or excluded from the boundary of all types of generic CPAs, as set out in the applied methodology are as follows (the sources are the same for all types of generic CPAs in the proposed POA):

	Source	Gas	Included in a generic CPA?	Is inclusion / exclusion justified in the PoA-DD?	How has this been validated?
Baseline emissions	CO ₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to project activity	CO ₂	Yes – for all CPA types	Yes	This was validated based on the site visit, validation of eligibility criteria, and review of the methodology: CO ₂ emissions from power plants connected to the South African electricity grid will be the main baseline emissions source
		CH ₄	No – for all CPA	Yes	This is in accordance with the applied methodology

	Source	Gas	Included in a generic CPA?	Is inclusion / exclusion justified in the PoA-DD?	How has this been validated?
			types		
		N ₂ O	No – for all CPA types	Yes	This is in accordance with the applied methodology
Project emissions	For geothermal power plants, fugitive emissions of CH ₄ and CO ₂ from non-condensable gases contained in geothermal steam	CO ₂	No – for all CPA types	Yes	This source is not relevant as geothermal power plants are not included in this PoA. This is in accordance with the applied methodology
		CH ₄	No – for all CPA types	Yes	This source is not relevant as geothermal power plants are not included in this PoA. This is in accordance with the applied methodology
		N ₂ O	No – for all CPA types	Yes	This source is not relevant as geothermal power plants are not included in this PoA. This is in accordance with the applied methodology
	CO ₂ emissions from combustion of fossil fuels for electricity generation in solar thermal power plants and geothermal power plants	CO ₂	No – for all CPA types	Yes	This source is not relevant as solar thermal and geothermal power plants are not included in this PoA. This is in accordance with the applied methodology
		CH ₄	No – for all CPA types	Yes	This source is not relevant as solar thermal and geothermal power plants are not included in this PoA. This is in accordance with the applied methodology
		N ₂ O	No – for all CPA types	Yes	This source is not relevant as solar thermal and geothermal power plants are not included in this PoA. This is in accordance with the applied methodology
	For hydro power plants, emissions of CH ₄ from the reservoir	CO ₂	No – for all CPA types	Yes	This source is not relevant as hydro power plants are not included in this PoA. This is in accordance with the applied methodology
		CH ₄	No – for all CPA types	Yes	This source is not relevant as hydro power plants are not included in this PoA. This is in accordance with the applied methodology
		N ₂ O	No – for all CPA types	Yes	This source is not relevant as hydro power plants are not included in this PoA. This is in accordance with the applied methodology

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.3.1	Has the PoA-DD justified the inclusion/exclusion of all potential sources of GHG emissions as set out in the applied baseline methodology	<p>ERM CVS evaluated whether the sources of GHG emission set out in the applied methodology were included in the boundary of all types of generic CPA and, where the methodology allows PPs to choose whether a source or gas is to be included within the boundary, this has been clearly justified in the PoA-DD. The validation was based on review of PoA-DD and the applied methodology.</p> <p>Justification of project emissions' exclusion in the GSP PoA-DD was confusing / not consistent with the proposed PoA: justification for excluding project emissions was given as major source of emissions. CL 8 was raised.</p> <p>ERM CVS reviewed the revised PoA-DD /1/ and confirms that the justification of project emission exclusion in the generic CPA of all types has been clarified and is now consistent with the description and eligibility criteria of the proposed PoA.</p> <p>CL 8 is closed.</p>	CL-8	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		After the above corrections were done by the CME, the revised PoA-DD /1/ sufficiently justifies the inclusion/exclusion of all potential sources of GHG emissions for all types of generic CPA as set out in the applied baseline methodology.		

Conclusion

The identified boundary and the selected sources and gases included in the final PoA-DD /1/ are appropriately described and justified for all types of generic CPAs, in accordance with the applied methodology. The information is correctly described in the section B.3 of Part II of the PoA-DD.

Emission sources not addressed by the methodology

ERM CVS evaluated whether there are any emission sources that will be affected by the generic CPA and are not addressed by the applied methodology.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.3.2	Were any emission sources identified that will be affected by the generic CPA and are not addressed by the selected approved methodology? If so, was clarification of, revision to or deviation from the methodology approved in accordance with required procedures.	No emission sources were identified that will be affected by the generic CPA and are not addressed by the selected approved methodology.	OK	OK

Conclusion

The final PoA-DD /1/ correctly describes the project boundary, including the physical delineation of the generic CPA, in compliance with the requirements of the selected baseline methodology, and this is consistent with observations in the first real case CPA and other documentation provided. All sources and GHGs required by the methodology have been included within the PoA boundary. The project boundary is justified for the PoA and generic CPAs, based on ERM CVS's local and sectoral knowledge.

8.4 Baseline identification

As per VVS section L.6, ERM CVS reviewed the PoA-DD to assess whether it correctly identifies the baseline for proposed CPAs, defined as the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed CPAs.

As per VVS paragraph 115, no alternative analysis is required if the approved methodology that is selected by the proposed CDM PoA prescribes the baseline scenario.

The baseline identification for all CPA types has been validated as follows:

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
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	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.4.1	Does the PoA-DD identify the baseline for a PoA and generic CPA, a scenario that represents the anthropogenic emissions by sources of GHG that would occur in the absence of the PoA?	The methodology applied by this PoA - ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (version 13.0.0) - dictates the baseline scenario for new renewable projects as follows: "Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system". The PoA-DD /1/ correctly lists this baseline scenario for all generic CPA types.	OK	OK
	Have the procedures/ steps to identify the most reasonable baseline scenario, as required by the methodology(ies) and applicable tools, been documented clearly in the PoA-DD for a generic CPA?	Since the baseline is specified by the methodology, no further procedures / steps to identify the most reasonable baseline scenario are required.	OK	OK

Conclusion

Based on the documentary evidence to cross check the information contained in the final PoA-DD /1/ as referenced above, ERM CVS confirms that:

The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario for all types of generic CPA and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM PoA. The identified baseline is in line with all relevant national and/or sectoral policies and circumstances.

8.5 Algorithms and/or formulae used to determine emission reductions

As per VVS section L.7, ERM CVS has evaluated whether the steps taken and equations applied to calculate project emissions, baseline emissions, leakage, and emission reductions comply with the requirements of the selected baseline and monitoring methodology.

ERM CVS conducted validation activities to determine whether the equations and parameters in the PoA-DD have been correctly applied by comparing them to those in the selected approved methodology. Where the methodology provides for selection between different options for equations or parameters, ERM CVS confirmed that adequate justification has been provided (based on the choice of the baseline scenario, context of the proposed generic CPA and other evidence provided) and that the correct equations and parameters have been used, in accordance with the methodology selected.

Ex Ante Data and Parameters

Each parameter required by the methodology and tools for this PoA is listed and validated in detail as follows:

Parameter required as per methodology / tools	Description of the parameter (as per methodology)	Is the parameter included in the PoA-DD?	Title and description in the PoA-DD line with the Methodology?	Data unit correctly expressed in PoA-DD?	Value in PoA-DD correct and provides for conservative estimate of Emission Reductions? How was this validated?	Measurement method correctly described in the PoA-DD (if applicable)
<i>Parameters applicable to all types of generic CPAs:</i>						
FC _{i,m,y} , FC _{i,y} , FC _{i,k,y} , FC _{i,n,y}	Amount of fossil fuel type <i>i</i> consumed by power plant/unit <i>m</i> , <i>k</i> or <i>n</i>	Yes - FC _{i,m,y}	Yes	Yes	Yes – validated based on review of Eskom	N/A

Parameter required as per methodology / tools	Description of the parameter (as per methodology)	Is the parameter included in the PoA-DD?	Title and description in the PoA-DD line with the Methodology?	Data unit correctly expressed in PoA-DD?	Value in PoA-DD correct and provides for conservative estimate of Emission Reductions? How was this validated?	Measurement method correctly described in the PoA-DD (if applicable)
and $FC_{i,n,h}$	n (or in the project electricity system in case of $FC_{i,y}$) in year y or hour h				annual report /15/.	
$NCV_{i,y}$	Net calorific value (energy content) of fossil fuel type i in year y	Yes	Yes	Yes	Yes. Validated by checking the IPCC default values /16/ - values at the lower limit of the confidence interval are used	N/A
$EF_{CO2,i,y}$ and $EF_{CO2,m,i,y}$	CO2 emission factor of fossil fuel type i used in power unit m in year y	Yes	Yes	Yes	Yes. Validated by checking the IPCC default values /16/ values at the lower limit of the confidence interval are used	N/A
$EG_{m,y}$, $EG_{y,y}$, $EG_{k,y}$ and $EG_{n,h}$	Net electricity generated by power plant/unit m , k or n (or in the project electricity system in case of EG_y) in year y or hour h	Yes - $EG_{m,y}$	Yes	Yes	Yes – validated based on review of Eskom annual report /15/ and monitoring reports of CDM projects /19-22/. As some of the relevant CDM projects do not have completed 3 years of monitored data, it is acceptable to estimate the data based on information in available monitoring reports as this is more conservative than assuming no electricity generation	N/A
$EG_{P,j,h}$ and $EG_{P,j,y}$	Electricity displaced by the project activity in hour h of year y , or in year y	No	N/A	N/A	N/A – as dispatched data analysis is not used	N/A
$\eta_{m,y}$ and $\eta_{k,y}$	Average net energy conversion efficiency of power unit m or k in year y	Yes - $\eta_{m,y}$	Yes	Yes	Yes – Validated by checking Annex 1 of the Tool to calculate the emission factor for an electricity system and plant/fuel type of the plants in 2006 Electricity supply statistics for South Africa /06/. Default value for open cycle gas turbines built after 2000 is used.	N/A
<i>The following parameters are required by the methodology but did not have to be included in the proposed PoA, as it does not include capacity additions, retrofits/replacements, and does not include hydro power schemes</i>						
CAP_m	Total capacity of off-grid power plants included in	No	N/A	N/A	N/A	N/A

Parameter required as per methodology / tools	Description of the parameter (as per methodology)	Is the parameter included in the PoA-DD?	Title and description in the PoA-DD line with the Methodology?	Data unit correctly expressed in PoA-DD?	Value in PoA-DD correct and provides for conservative estimate of Emission Reductions? How was this validated?	Measurement method correctly described in the PoA-DD (if applicable)
	off-grid power plant class <i>m</i>					
$PLF_{\text{default, off-grid, } y}$	Plant load factor for off-grid generation in year <i>y</i>	No	N/A	N/A	N/A	N/A
$T_{\text{grid, } y}$	Average time the grid was available to final electricity consumers in year <i>y</i>	No	N/A	N/A	N/A	N/A
GWP_{CH_4}	Global warming potential of methane valid for the relevant commitment period	No	N/A	N/A	N/A	N/A
$EG_{\text{historical}}$	Annual average historical net electricity generation delivered to the grid by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity	No	N/A	N/A	N/A	N/A
$\sigma_{\text{historical}}$	Standard deviation of the annual average historical net electricity generation delivered to the grid by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity	No	N/A	N/A	N/A	N/A
$DATE_{\text{BaselineRetrofit}}$	Point in time when the existing equipment would need to be replaced in the absence of the project activity	No	N/A	N/A	N/A	N/A
$DATE_{\text{hist}}$	Point in time from which the time span of historical data for retrofit or replacement project activities may start	No	N/A	N/A	N/A	N/A
EF_{Res}	Default emission factor for emissions from reservoirs	No	N/A	N/A	N/A	N/A
Cap_{BL}	Installed capacity of the hydro power plant before the implementation of the project activity. For new hydro power plants, this value is zero	No	N/A	N/A	N/A	N/A
A_{BL}	Area of the single or multiple reservoirs measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m2). For new reservoirs, this value is zero	No	N/A	N/A	N/A	N/A

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.5.1	<p>Have the parameters required by the methodology / tools been correctly described in the PoA-DD?</p> <p>Where the methodology provides for selection between different options for data and parameters; is the choice of data and parameters justified?</p>	<p>ERM CVS has checked section B.6.2 of the generic part of the PoA-DD /1/ against the methodology and the Tool for calculating grid emissions factor of an electricity system and can confirm that all parameters required by the methodology and the Tool have been correctly included in the PoA-DD.</p> <p>The tool allows choosing data sources for $NCV_{i,y}$, $EF_{CO2,i,y}$ / $EF_{CO2,m,i,y}$, and $\eta_{m,y}$. The choice is explained and justified in the PoA-DD.</p> <p>CL 12 was raised: Please clarify and describe transparently how for CDM projects values of $EG_{m,y}$ were derived for 3 years considering that monitoring reports are not available for all 3 years.</p> <p>ERM CVS reviewed the revised PoA-DD /1/, and the PP's response. The DOE can confirm that as some of the relevant CDM projects do not have completed 3 years of monitored data, it is acceptable to estimate the data based on information in available monitoring reports as this is more conservative than assuming no electricity generation. This explanation has been included in the PoA-DD /1/.</p>	CL-12	OK

Equations and calculations used to calculate emission reductions

The following steps are applied in the PoA-DD to determine emission reductions of proposed CPAs, in accordance with the methodology and tools applied (the procedures are the same for all generic CPA types of this PoA):

Baseline emissions

Baseline emissions include only CO₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The baseline emissions are to be calculated as follows (**equation 6**):

$$BE_y = EG_{PJ,y} * EF_{grid,CM,y}$$

Where:

- BE_y = Baseline Emissions in year y (tCO₂)
- $EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh)
- $EF_{grid,CM,y}$ = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate emission factor for an electricity system" (tCO₂/MWh)

Calculation of $EG_{PJ,y}$

CPAs under the PoA involve the installation of new grid-connected renewable power plants/units at a site where no renewable power plant was operated prior to the implementation of the project activity, therefore $EG_{PJ,y}$ is calculated as per (**equation 7**):

$$EG_{PJ,y} = EG_{facility,y}$$

Where:

- $EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh)
- $EG_{facility,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh)

Calculation of $EF_{grid,CM,y}$

The emission factor is calculated ex-ante using the combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the *Tool to calculate the emission factor for an electricity system version 02.2.1*.

The procedures applied to calculate the grid emission factor for South African electricity system are described as shown below and will be updated after every seven years of the PoA. Equations and fixed parameter values to calculate the grid emission factor for South Africa are provided below.

Step 1. Identify the relevant electric power system

For calculating the grid emission factor, the project activity has identified the South African national grid as the relevant project electricity system.

The identification of the South African national grid as the relevant project electricity system is based on the following arguments:

- The South African DNA has not published a delineation of the project electricity system and connected electricity system.
- There is no proof of the existence of significant transmission constraints by means of the application criteria, therefore the application criteria does not result in a clear grid boundary.
- Finally, South Africa does not have a layered dispatch system and the country has only one grid system that serves the entire country. Therefore, and in line with version 02.2.1 of the Tool to calculate the emission factor for an electricity system, the national grid definition is used by default.

Step 2. Choose whether to include off-grid power plants in the project electricity system (optional)

The PoA has selected Option I, only grid power plants were included in the calculation.

Step 3. Select a method to determine the operating margin (OM)

The *Tool to calculate the emission factor for an electricity system* provides for the following methods to determine the operating margin (OM):

- a) Simple OM
- b) Simple adjusted OM
- c) Dispatch data analysis OM
- d) Average OM

In South Africa, low-cost/must-run resources constitute more than 50% of total grid generation. Apart from hydro, wind, and nuclear power plants, most coal-fired power plants have to be considered as low-cost/must-run as:

- Coal used in South African power plants is a cheap resource compared to other technologies e.g. natural gas/kerosene because South Africa is the 6th largest producer of coal in the world with one of the lowest coal prices in the world.
- Coal power plants in South Africa have an average capacity factor higher than 75%. In line with international common practice, power plants with a capacity factor higher than 75% are considered as base-load power plants, which are usually dispatched independently of the daily or seasonal load. Furthermore, Eskom Holdings Annual Report 2011 defines most of the coal power plants as base load plants.

Because low-cost/must-run resources constitute more than 50% of the total grid generation, the simple OM method cannot be used. Therefore, the project activity has correctly selected the average OM method for calculating the operating margin.

In terms of data vintage, the PoA will use the *ex ante* option, and the emission factor is determined at the validation stage for 7 years of the PoA based on a 3-year generation weighted average based on the most recent data available at the time of submission of the CDM-PoA-DD to the DOE for validation.

Step 4: Calculate the operating margin emission factor according to the selected method

The average OM emission factor ($EF_{grid, OM-ave, y}$), is calculated as the average emission rate of all power plants serving the grid, using the methodological guidance as described under (a) for the simple OM, but also including the low-cost/must-run power plants in all equations.

The average OM emission factor is calculated using equation 1

$$EF_{grid,OM-ave,y} = \frac{\sum_m EG_{m,y} \times EF_{EL,m,y}}{\sum_m EG_{m,y}}$$

Where:

$EF_{grid,OM-ave,y}$	=	Average operating margin CO2 emission factor in year y (tCO2/MWh)
$EG_{m,y}$	=	Net quantity of electricity generated and delivered to the grid by power unit m in year y (MWh)
$EF_{EL,m,y}$	=	CO2 emission factor of power unit m in year y (tCO2/MWh)
m	=	All grid power units serving the grid in year y
y	=	The relevant year as per the data vintage chosen in Step 3

Determination of $EG_{m,y}$

For grid power plants, $EG_{m,y}$ is based on published records from Eskom and CDM monitoring reports for the CDM power plants. The grid emission factor calculations are based on the publicly available data in South Africa, i.e. Eskom power plants and CDM projects. This represents 95% of the total electricity generated. Electricity generated from Independent Power Producers and Municipality owned power plants is not available and is not included in this calculation. The appropriateness of this is validated under question 7.5.2 below.

Determination of $EF_{EL,m,y}$

Because data on fuel consumption and electricity generation of the grid-connected units is available, Option A1 is used to determine the emission factors of most of the grid power units. However, for Acacia, Port Rex, Ankerlig, Gourikwa only data on electricity generation and fuel type is available for the year 2009-2010, thus Option A2 is used instead for those.

Option A1:

$$EF_{EL,m,y} = \frac{\sum_i FC_{i,m,y} \times NCV_{i,y} \times EF_{CO2,i,y}}{EG_{m,y}}$$

Where:

$EF_{EL,m,y}$	=	CO2 emission factor of power unit m in year y (tCO2/MWh)
$FC_{i,m,y}$	=	Amount of fossil fuel type i consumed by power unit m in year y (Mass or volume unit)
$NCV_{i,y}$	=	Net calorific value (energy content) of fossil fuel type i in year y (GJ/mass or volume unit)
$EF_{CO2,i,y}$	=	CO2 emission factor of fossil fuel type i in year y (tCO2/GJ)
$EG_{m,y}$	=	Net quantity of electricity generated and delivered to the grid by power unit m in year y (MWh)
m	=	All grid power units serving the grid in year y
i	=	All fossil fuel types combusted in power unit m in year y
y	=	The relevant year as per the data vintage chosen in Step 3

Option A2:

$$EF_{EL,m,y} = \frac{EF_{CO2,m,i,y} \times 3.6}{\eta_{m,y}}$$

Where:

$EF_{EL,m,y}$	=	CO2 emission factor of power unit m in year y (tCO2/MWh)
$EF_{CO2,m,i,y}$	=	Average CO2 emission factor of fossil fuel type i in power unit m in year y (tCO2/GJ)
$\eta_{m,y}$	=	Average net energy conversion efficiency in power unit m in year y (ratio)
M	=	All grid power units serving the grid in year y
i	=	All fossil fuel types combusted in power unit m in year y
y	=	The relevant year as per the data vintage chosen in Step 3

The default value for open cycle gas turbines that began generation after the year 2000 in Annex 1 in the *Tool to calculate the emission factor for an electricity system* has been used for the four power stations.

The **OM** was correctly calculated as **0.9585** tCO2/MWh

Step 5: Calculate the build margin (BM) emission factor

For the calculation of the build margin (BM) emission factor, Option 1 data vintage has been chosen. Hence, for the first crediting period, the build margin emission factor is calculated *ex ante* based on the most recent information available on units already built for sample group m at the time of CDM-PoA-DD submission to the DOE for validation. For the second crediting period, the build margin emission factor will be updated based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the DOE. For the third crediting period, the build margin emission factor calculated for the second crediting period will be used.

The build margin emission factor is thus calculated using **equation 12** of the *Tool to calculate the emission factor for an electricity system*, as shown below:

$$EF_{grid,BM,y} = \frac{\sum_m EG_{m,y} \times EF_{EL,m,y}}{\sum_m EG_{m,y}}$$

Where:

$EF_{grid,BM,y}$	=	Build margin CO2 emission factor in year y (tCO2/MWh)
$EG_{m,y}$	=	Net quantity of electricity generated and delivered to the grid by power unit m in year y (MWh)
$EF_{EL,m,y}$	=	CO2 emission factor of power unit m in year y (tCO2/MWh)
m	=	Power units included in the build margin
y	=	Most recent historical year for which power generation data is available

Power units m included in the build margin were identified following the steps in accordance with the *Tool to calculate the grid emission factor for an electricity system*:

- SET_{5-units} and SET_{≥20%} were identified.
- Both SET_{5-units} and SET_{≥20%} comprise the same power plants, thus both are SET_{sample}.

- As some of the power plants in the SET_{sample}, started to supply electricity to the grid more than 10 years ago, step (d) was considered and SET_{sample-CDM} was calculated.
- AEG SET_{sample-CDM} was around 0.03%, much lower than 20% required by the *Tool to calculate the emission factor for an electricity system*. Therefore, step (e) was considered and power units that started to supply electricity to the grid more than 10 years ago were added until the electricity generation of the new set comprised 20% of the annual electricity generation. The final set of power plants included in the calculation of the Build Margin (SET_{sample-CDM>10yrs}) was as follows: Gourikwa, Ankerlig, Klipheuwel, Bethlehem hydro, Durban landfill gas Bissar Road project, PetroSA biogas to energy, Durban landfill gas to energy project – Marianhill and La Mercy landfills, Majuba, and Kendal.

The CO₂ emission factor of each power unit m ($EF_{EL,m,y}$) is determined as per the guidance in step 4 (a) for the simple OM, using **equation (3)** under option A2, using for y the most recent historical year for which grid power generation data is available, in this case 2010-2011, and using for m the power units included in the build margin. This is correct, following guidelines in the tool that stipulates as follows “If the power units included in the build margin m correspond to the sample group SET_{sample-CDM>10yrs}, then, as a conservative approach, only option A2 from guidance in Step 4 (a) can be used and the default values provided in Annex 1 shall be used to determine the parameter $\eta_{m,y}$.”.

Equation 3, option A2 is shown below:

$$EF_{EL,m,y} = \frac{EF_{CO2,m,i,y} \times 3.6}{\eta_{m,y}}$$

Where:

$EF_{EL,m,y}$	=	CO ₂ emission factor of power unit m in year y (tCO ₂ /MWh)
$EF_{CO2,m,i,y}$	=	Average CO ₂ emission factor of fuel type i used in power plant m in year y (tCO ₂ /GJ)
$\eta_{m,y}$	=	Average net energy conversion efficiency of power unit m in year y (ratio)
m	=	The power units included in the build margin
y	=	The relevant year as per the data vintage chosen in Step 5

The **BM** for this PoA was correctly calculated as **0.9063** tCO₂/MWh

Step 6: Calculate the Combined Margin

Option A i.e. the weighted average combined margin is used.

The combined margin emissions factor is calculated as follows:

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times w_{OM} + EF_{grid,BM,y} \times w_{BM}$$

Where:

$EF_{grid,BM,y}$	=	Build margin CO ₂ emission factor in year y (tCO ₂ /MWh)
$EF_{grid,OM,y}$	=	Operating margin CO ₂ emission factor in year (tCO ₂ /MWh)
w_{OM}	=	Weighting of operating margin emissions factor (%)
w_{BM}	=	Weighting of build margin emissions factor (%)

The following default values are used for w_{OM} and w_{BM} : $w_{OM} = 0.75$ and $w_{BM} = 0.25$ for the first crediting period and subsequent crediting periods. This is correct for all types of CPAs covered in this PoA, in accordance with the applied methodology.

The CM was correctly calculated as 0.9454 tCO₂/MWh

Project emissions

The PoA includes wind power and solar PV projects. Therefore, in line with the methodology, project emissions are zero ($PE_y = 0$).

Leakage

No leakage emissions are considered.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
7.5.2	<p>Has the PP correctly applied all relevant calculations as required by the methodology and associated tools?</p> <p>Is it fully explained how the procedures provided in the Methodology and applicable Tools are applied by the proposed PoA? (i.e. Are the required steps clearly followed?)</p>	<p>ERM CVS checked methodological choices in the PoA-DD against the text of the applied methodology and the Tool to calculate grid emissions factor of an electricity system. The steps of the methodology and the Tool are correctly followed in the PoA-DD and fully explained.</p> <p>ERM CVS checked whether it is suitable not to include data on electricity generated from Independent Power Producers and Municipality owned power plants in the calculation of grid emission factor. It was confirmed during interviews with the NERSA representatives that the Electricity Supply Statistics for South Africa in 2006 /28/ is the latest publicly available information source on electricity generation from municipal and IPP-owned power plants. Based on review of data on net electricity generation from municipal and IPP-owned power plants in 2006 /28/, ERM CVS can confirm that coal-based net generation constituted 97% of the total from these sources. After taking out own consumption, the share is even higher, 98.9%. As the generation from these plants is primarily coal-based, it is conservative to exclude these power plants from calculations of grid emissions factor.</p> <p>However, incorrect option was closed to calculate $FE_{EL,m,y}$. power units included in a sample group for calculating BM correspond to the sample group $SET_{sample-DEM- >10yrs}$ but option A1 from Step 4(a) is used for calculating $FE_{EL,m,y}$. This was not in accordance with the Tool, which requires option A2 to be used in such case. CAR 6 was raised.</p> <p>ERM CVS reviewed the revised PoA-DD/1/ and the revised Grid Emissions Factor spread sheet /4/ against the Tool to calculate the emissions factor for an electricity system, and can confirm that Option A2 is now correctly used in Step 4(a). CAR 6 is closed.</p> <p>After these corrections ERM CVS can confirm that the PP correctly applied all relevant calculations as required by the methodology and the Tool to calculate grid emissions factor of an electricity system, and the PoA-DD fully explained how the procedures provided in the Methodology and the Tool are applied by the proposed PoA.</p>	CAR-6	OK
	Where the methodology or tool(s) provides for selection between different options for equations; is every choice of options for calculating project emissions, baseline emissions and leakage offered by the methodology correctly justified in the context of the PoA and baseline scenario?	<p>The "Tool to calculate the emission factor for an electricity system" provides for selection between different options for equations.</p> <ul style="list-style-type: none"> Options to calculate OM. Because low-cost/must-run resources constitute more than 50% of the total grid generation, the simple OM method cannot be used. Therefore, the project activity has selected the average OM method for calculating the operating margin. This is correct and was validated by reviewing Eskom publications Option A1 is used for calculating emission factors of grid power units, and the choice is sufficiently justified Option 1 in terms of data vintage is chosen for calculating BM, and the choice is clearly explained 	OK	OK
	Are the formulae required for the determination of project emissions, baseline emissions	ERM CVS has checked the formulae in the PoA-DD against the text of the applied methodology and the Tool to calculate grid emissions factor of an electricity system, and can confirm that the formulae are presented in a complete	OK	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	and leakage correctly presented in a complete and transparent manner, enabling a complete identification of parameters to be used and / or monitored?	and transparent manner and all parameters used in emission reduction calculations can be clearly identified.		
	If applicable, are detailed calculations provided in a traceable spreadsheet showing relevant information?	<p>Calculations are provided in a traceable spreadsheet, which was checked by ERM CVS: calculations were conducted correctly apart the issue raised as CAR 6.</p> <p>CAR 6 has been closed - please refer to explanation above. All the calculations are now correct and are provided in a traceable spreadsheet /4/ showing relevant information.</p>	CAR-6	OK

Conclusion

The PoA-DD correctly applies the methodology and appropriate tools to provide a framework for calculating the emission reductions of a generic CPA. All assumptions and data used are properly listed, including references and sources where applicable. Calculation of actual baseline, project and leakage emissions will be made only at CPA level.

9 Validation findings – Additionality

As per the VVS sections L.8 to L.13 and the 'Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities', ERM CVS assessed the PoA-DD to determine whether it clearly describes how the proposed CDM PoA is additional, as supported by sufficient and appropriate evidence. In accordance with the standard, additionality must be demonstrated for the POA as a whole, and it must be demonstrated that each of the individual CPAs are additional. As per the CDM Project Standard, the CME must demonstrate that the proposed CDM PoA is additional in accordance with the "Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities". A full additionality assessment is not required in the context of CPA. Instead, the confirmation of additionality for CPAs should be conducted by means of the eligibility criteria.

As per the 'Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities', additionality of a PoA must be demonstrated by establishing that in the absence of CDM, none of the implemented CPAs would occur. PoAs that will include one or more microscale projects as CPA shall include eligibility criteria derived from all the relevant requirements of the 'Guidelines for demonstrating additionality of microscale project activities'. PoAs that will include one or more small-scale projects as CPAs shall include eligibility criteria derived from all the relevant requirements of Guidelines on the demonstration of additionality of small-scale project activities. PoAs that will include one or more large-scale projects as CPA shall include eligibility criteria derived from all the relevant requirements contained in the additionality section of the large-scale methodology(ies).

ERM CVS has validated the additionality of the PoA as a whole and that the PoA-DD includes adequate eligibility criteria to ensure the additionality of individual CPAs, as per the CDM Project standard. ERM CVS has ensured that all additionality guidelines set out in the approved methodology and tools have been included within the CPA eligibility criteria. ERM CVS assessed and verified the reliability and credibility of all data, rationales, assumptions, justifications and documentation provided by the PPs to support the demonstration of additionality in order to critically assess the presented evidence, using local knowledge and sectoral and financial expertise.

In undertaking this aspect of the validation, ERM CVS considered tools and documents provided by the CDM Executive Board to demonstrate the additionality of proposed CDM PoA, as well as specific complementary or alternative requirements included in the approved CDM methodology.

In the sections below, ERM CVS describes all steps taken, and sources of information used, to cross-check the information contained in the PoA-DD on additionality. Where appropriate, we describe how the validation team determined that the documentation assessed is authentic.

9.1 Prior consideration of the CDM

As per EB 60 annex 26, The Board agreed that the "Guidelines for the demonstration and assessment of prior consideration of the CDM" do not apply to PoAs, as at present it is expected that no component of the programme will commence prior to the start date of validation. Based on the site visit ERM CVS can confirm that to its knowledge there is no component of the programme that commenced prior to the start of validation.

9.2 Additionality of the PoA as a whole

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
9.2.1	Has the CME demonstrated that in the absence of the CDM either: (i) the proposed voluntary measure would not be implemented, or (ii) the mandatory policy/regulation would be systematically not enforced and that non-compliance with those requirements is widespread in the	ERM CVS reviewed the PoA-DD and can confirm that the PoA is a voluntary coordinated action and case (i) is used for demonstrating additionality of the PoA as a whole, i.e. demonstrating that the proposed voluntary action would not be implemented in the absence of CDM. As per Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities, additionality shall be demonstrated by establishing that in the absence of CDM, none of the implemented CPAs would occur /29/. In this PoA, additionality is demonstrated at CPA level using additionality-related eligibility criteria derived from the provisions of the Tool for the demonstration and assessment of additionality and the applied methodology. If each CPA demonstrates that in the absence of CDM it would not be implemented, the coordinated voluntary action proposed by the PoA will consequently not be implemented.	CAR-5	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	country/region, or (iii) that the PoA will lead to a greater level of enforcement of the existing mandatory policy /regulation.	Please refer to CAR 5: Eligibility criteria on additionality were not sufficiently objective and comprehensive to permit the assessment whether CPAs to be included into the PoA are additional CAR 5 is closed - please see section 9.4 for details. After these corrections ERM CVS can confirm that the PP correctly demonstrated that the PoA, as a whole, is additional.		

9.3 Identification of alternatives

The project applies methodology ACM0002, which defines the baseline as: for greenfield activities : “Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system”.

The approved methodology that is selected by the proposed CPA prescribes the baseline scenario and no further analysis on baseline alternatives is required.

According to paragraph 8 of the *Tool for the demonstration and assessment of additionality*, project activities that apply the tool in the context of approved consolidated methodology ACM0002, only need to identify that there is at least one credible and feasible alternative that would be more attractive than the proposed project activity. In line with the above guidelines, the following two alternatives have been identified:

Alternative 1: The project activity not undertaken as a CDM project activity;

Alternative 2: Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the *Tool to calculate the emission factor for an electricity system*.

9.4 Assessment of additionality of a CPA

As per the “Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities”, a full additionality assessment is not required in the context of CPA. Instead, the confirmation of additionality for CPAs should be conducted by means of the eligibility criteria. Additionality of CPAs is to be demonstrated using additionality-related eligibility criteria.

In the proposed PoA, additionality-related eligibility criteria are different according to the CPA type – whether wind or solar PV CPAs use first of its kind barrier or investment analysis, with part of the criteria being common for all types of CPAs. The criteria are derived from the Tool for the demonstration of additionality, provisions of applied methodology, and Guidelines on additionality of first-of-its-kind project activities, therefore ERM CVS has validated whether the demonstration correctly applies the provisions of the methodology and the Tool. ERM CVS has also validated whether compliance with the additionality-related eligibility criteria set in the PoA design document will ensure that all the relevant additionality-related guidelines, tools or any requirements embedded in the methodologies are met.

Validation how the eligibility criteria were used in the first real case CPA is described in a separate CPA validation report.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
9.4.1	Does the description of assessment of CPA	<u>Set of additionality eligibility criteria for CPAs applying first of its kind barrier</u>	CAR-5	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	<p>additionality correctly follow the methodology and relevant tool(s) and guidance? Do the criteria include criteria derived from all the relevant requirements of relevant guidelines or methodology and tool(s)s?</p> <p>Are the criteria sufficiently objective and verifiable?</p>	<p>Eligibility criteria 6.1 and 6.2 were checked against the Guidelines on additionality of first-of-its-kind project activities, and ERM CVS can confirm that the criteria cover all relevant provisions of the Guidelines, i.e. conditions on technology (correct definition of the term “different technologies” is provided in the explanation of the criteria) and crediting period selection. Compliance can be checked using the same evidence as for compliance with criteria related to technology, and checking selected crediting period in a CPA-DD.</p> <p>Eligibility criterion 6.3 (<i>condition that a wind power CPA has applied a tariff of not more than 1,150 ZAR/MWh in the investment analysis, and solar PV CPA – not more than 2,850 ZAR/MWh</i>): The threshold values were confirmed to be in line with para 5.1.4.5 of Part A of the <i>Request for qualification and proposals for new generation capacity under the IPP procurement programme /17.1/</i>. As the PoA framework and additionality is linked to the barriers due to regulating uncertainty and the procurement programme, it is considered appropriate to link threshold values to the values specified by the tender. The values will be updated every two years or when the tariff is revised by the IPP procurement programme or other relevant government regulation, whichever is earlier.</p> <p>Criterion 6.4 (<i>that total CAPEX of the project is more than 1,250,000 Euro/MW for wind CPAs and more than 3,000,000 USD/MW for solar PV CPAs, taking into account CAPEX items being derived from and be in accordance with Volume 4 – Financial requirements of the IPP Procurement Programme</i>):</p> <ul style="list-style-type: none"> For wind CPAs, the PP determined the minimum value from Bloomberg New Energy Finance and the European Wind Energy Association both of which were checked by ERM CVS /31//33/. ERM CVS also found that large companies such as EDP Renewables /32/ and Renewable Energy Generation /36/ both use €1.250,000 per MW as an assumed CAPEX. For solar CPAs, the PP determined this minimum value from the International Renewable Energy Agency /38/, and the International Energy Agency /37/ which were checked by ERM CVS. The validation team also found that the above-mentioned large renewables companies also use US\$3,000,000 per MW as an assumed CAPEX. Therefore for both technology types, values lower than those minimum values are likely to signal financial viability without carbon credits, and higher than this increases the likelihood of the project being additional. The PP has determined what type of evidence will be provided, which are considered suitable. <p>Criterion 6.5 (<i>that total operating costs will be at least 12 EUR/MWh for wind power CPAs, and 10 USD/MWh for solar PV CPAs, taking into account requirements regarding OPEX items in accordance with Volume 4 – Financial requirements of the IPP Procurement Programme</i>) /17/.</p> <ul style="list-style-type: none"> For validating the threshold value for wind power CPAs, ERM CVS checked the Economics of Wind Energy report used by the PP to determine the threshold values /33/ and reviewed articles by Wind Power Monthly for cross-checking purposes, where the average cost of operation for an onshore wind farm was €12-20/MWh /35/. For solar PV CPAs, ERM CVS reviewed the US Department of Energy’s cost estimates, and found that the average estimated Solar O&M cost is US\$7.7/MWh /30/, the value of 10 USD/MWh used by the PP was derived from the South Africa Department of Energy’s IPP request for proposal documentation “Volume 4 – Financial requirements of the IPP Procurement Programme” /17/. These minimum levels required by the PoA can therefore be considered conservative, and increase the likelihood of the project 		

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		<p>being additional.</p> <p>Criterion 6.6 (that CPAs have considered or will consider all relevant regulations and provisions with regard to financial flows, taxes, tariffs, depreciation and power purchase agreements applicable in South Africa): As there is no objective parameter for measuring investment climate, the formulated criterion is considered suitable. Compliance will be evidenced based on documents submitted to the Department of Energy or project financiers, or by confirmation letter signed by the CPA implementer.</p> <p>Eligibility criteria 6.3 to 6.6 are confirmed to be in accordance with the relevant provisions of the applied methodology.</p> <p>Criteria 3.3 to 3.5 are also related to additionality as they are on installed capacity, load factor, and wind speed or solar irradiation. Please refer to question 7.1.3 for details on how they were validated.</p> <p><u>Set of criteria for CPAs applying investment analysis</u></p> <p>The CME has selected that CPA types that use investment analysis, will use benchmark analysis (criterion 6.1), which is appropriate given that the CPAs to be included in this PoA generate revenues from electricity sales (hence option I, simple cost analysis, is not applicable) and the alternative (continuation of electricity supply by the grid) is not a comparable investment alternative (hence option II, investment comparison analysis, is not applicable). The selection by the CME is in line with the 'Tool for the demonstration and assessment of additionality' and the 'Guidelines on the assessment of investment analysis'</p> <p>The procedure and requirements for applying benchmark analysis at CPA level was not explained in the GSP PoA-DD – please refer to CAR 5, part b).</p> <p>ERM CVS checked revised eligibility criteria and checked them against the Tool for the demonstration and assessment of additionality. The criteria are derived from steps of the Tool, and the relevant requirements of the Tool are sufficiently covered.</p> <p>The CME chose that CPAs will use either (a) the pre-tax nominal WACC as benchmark for the Project IRR as indicator, or (b) the post-tax nominal Return on Equity as benchmark in combination with the Equity IRR as indicator in benchmark analysis for proving CPA additionality (criterion 6.2). The respective benchmarks are consistent with the type of indicators.</p> <p>The revised PoA-DD /1/ contains procedures for the calculation of the benchmark. The steps for calculating WACC and Return on Equity are in line with the Guidelines on the assessment of investment analysis.</p> <p>Criteria 6.3 to 6.5 relate to the conditions on investment decision date, input parameters to be applicable at the time of the investment decision, and a requirement that the calculated indicator is lower than the benchmark. The criteria are confirmed to be in line with the Tool for the demonstration and assessment of additionality and Guidelines on the assessment of investment analysis. The date of the investment decision is either based on the date on which the project has received the resource (wind or solar) assessment report and the board has decided to proceed with the project, or the date on which the project has committed significant financial resources towards the implementation of the project. This will be evidenced by the resource assessment report together with a board resolution or by a contract involving the commitment of significant financial resources towards the implementation of the project. ERM CVS reviewed the CDM Glossary of Terms, and based on sector expert knowledge, confirms that the evidence required by the CME is sufficient to determine a real commitment to the project expenditures. This criterion is sufficiently objective and verifiable</p> <p>Criteria 6.6 to 6.8 are the same as criteria 6.3 to 6.6 for CPAs that apply first of</p>		

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		<p>its kind barrier and are validated above.</p> <p>Further criteria were derived for input parameters:</p> <p>Criterion 6.9 (on the income tax rate of 28%). ERM CVS reviewed a reliable South African tax guide (http://moorestephens.co.za/pdf/Moore_Stephens_Tax_Guide_2012_13.pdf) and confirms that 28% is the current income tax in South Africa</p> <p>Criterion 6.10 (on applicable depreciation rates). ERM CVS reviewed a South African Taxation laws amendment bill /39/, and confirms that the assets for energy infrastructure projects are depreciable over a three-year period at a 50:30:20 per cent rate, in line with what is stated in the PoA-DD .</p> <p>Criterion 6.11 (on the reference source for the exchange rate). The exchange rates provided by the South African government as part of the <i>Request for qualification and proposals for new generation capacity under the IPP procurement programme</i> will be used. Alternatively, the exchange rate reported by South African Reserve Bank on the date of the investment decision can be used. In case both are available, the more conservative one will be used. As the POA and its additionality and eligibility criteria are linked to the regulatory framework and procurement programme, the reference sources are considered suitable.</p> <p>Criteria 6.12 and 6.13 (on the sensitivity analysis) are in line with the Tool for the demonstration and assessment of additionality and Guidelines on the assessment of investment analysis. The criteria specify which parameters will have to be analysed in sensitivity analysis.</p> <p>Criterion 6.14 (on the common practice analysis) is in accordance with the relevant provisions of the Tool for the demonstration and assessment of additionality.</p> <p>The description of assessment of CPA additionality and relevant eligibility criteria in the revised PoA-DD /1/ correctly follows the methodology and relevant requirements of the <i>Tool for the demonstration and assessment of additionality</i> and the <i>Standard for Demonstration of Additionality, development of Eligibility Criteria and Application of Multiple Methodologies for Programme of Activities</i> /29/.</p> <p>All criteria related to investment climate and specified threshold values will be updated every two years, in line with provisions of the applied methodology ACM0002.</p> <p>Criteria 3.3 to 3.5 are also related to additionality as they are on installed capacity, load factor, and wind speed or solar irradiation. Please refer to question 7.1.3 for details on how they were validated.</p> <p>Following these revisions in the PoA-DD, CAR 5 was closed and ERM CVS can confirm that eligibility criteria related to additionality are in accordance with the relevant provisions of the Tool for the demonstration and assessment of additionality and the applied methodology ACM0002, and are sufficiently objective and verifiable.</p>		

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
9.4.2	Will compliance with the additionality-related eligibility criteria set in the PoA-DD ensure that all the relevant additionality-related guidelines, tools or any requirements embedded in the methodologies are met	<p>Please refer to CAR 5: Eligibility criteria on additionality are not sufficiently objective and comprehensive to permit the assessment whether CPAs to be included into the PoA are additional</p> <p>CAR 5 is closed - please see Questions 7.1.6 and 9.4.1 for details.</p> <p>Following closure of CAR 5, ERM CVS can confirm that compliance with the additionality-related eligibility criteria set in the PoA-DD will ensure that all the requirements of relevant additionality-related guidelines are met.</p>	CAR-5	OK

Conclusion

The description of how CPA additionality will be assessed correctly follows the methodology and relevant guidelines. Compliance of CPAs with the additionality-related eligibility criteria set in the PoA design document will ensure that all the relevant additionality-related guidelines, tools or any requirements embedded in the methodologies are met. How eligibility criteria are met by specific CPAs will be validated at CPA level and a conclusion on the results of the CPA additionality will be conformed at CPA level.

10 Validation Findings - Operational, management and monitoring plan for the programme of activities

ERM CVS has validated the competencies of the CME in accordance with paragraph 17 of the 'Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities'. According to the requirements, the CMEs shall have the competencies to check the features of potential CPAs and ensure that each CPA meets all requirements and eligibility criteria before inclusion in the registered PoA. ERM CVS has validated the management system as developed and implemented by the CME as follows.

10.1 Operation and Management Plan

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
10.1.1	Has the CME demonstrated that there is an operational and management system for the implementation and management of the PoA?	<p>Description of operational and management system was not sufficient in the GSP PoA-DD: it did not cover all provisions set out in the Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies /29/. CAR 7 was raised.</p> <p>ERM CVS reviewed the revised PoA-DD /1/, and the "PoA Management and CPA Inclusion Manual" /24/, and confirms that Section C: Management System has been amended to include:</p> <ul style="list-style-type: none"> - Records of arrangements for training and capacity development for personnel - Procedures for technical review of inclusion of CPAs - Measures for continuous improvements of the PoA management system <p>These sections provide sufficient information to meet the provisions of Paragraph 17 of the above-referred Standard /29/.</p> <p>The CME management manual provides a synopsis of all the operational and managements arrangements and cover all provisions stipulated by the Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities.</p> <p>CAR 7 is closed.</p>	CAR-7	OK
10.1.2	Does the operational and management system include clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies?	<p>Distribution of roles and responsibilities between the CME and CPA operators is described in the PoA-DD. However, roles related to monitoring and record keeping were inconsistent and not clear in the GSP version. CL 9 was raised.</p> <p>ERM CVS reviewed the revised PoA-DD /1/ and confirmed that the Role and Responsibilities of the CME and CPA implementing entity with respect to record keeping and monitoring are sufficiently clarified and have been checked against the CME management manual.</p> <p>Under section B.7.2, the description of the operational and management has clarified the handling of records by the monitoring officer (CPA) and the programme officer (PoA), including how and when the data is to be transferred.</p> <p>CL 9 is closed.</p>	CL-9	OK
10.1.3	Does the system include records of arrangements for training and capacity development for personnel?	<p>The operational and management plan described in the GSP PoA-DD did not include arrangements for training and capacity development for personnel – please refer to CAR 7.</p> <p>CAR 7 was closed after Section C of the PoA-DD was revised by the PP and the CME management manual /24/ was provided, which sufficiently outlines the</p>	CAR-7	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		arrangements for training and capacity development for personnel.		
10.1.4	Does the system include procedures for technical review of inclusion of CPAs?	The operational and management plan described in the PoA-DD mentions quality check of the CPA inclusion. However, it was not clear if this would be considered as technical review, what procedure will be followed, and whether the process will be documented – please refer to CAR 7. CAR 7 was closed after Section C of the PoA-DD was revised by the PP and the CME management manual /24/ was provided, which sufficiently includes procedures for technical review of inclusion of CPAs.	CAR-7	OK
10.1.5	Does the system include a procedure to avoid double counting (e.g. to avoid the case of including a new CPA that has already been registered either as a CDM project activity or as a CPA of another PoA)?	The operational and management plan described in the PoA-DD includes procedures to avoid double counting. The procedure is clearly explained, and was confirmed during interviews with the CME.	OK	OK
10.1.6	Does the system include records and documentation control process for each CPA under the PoA?	The operational and management plan described in the PoA-DD includes provisions for record keeping system. Please refer CL 9: roles and responsibilities of the CME and CPA implementer in monitoring and record keeping were not sufficiently clear in the GSP version. CL 9 was closed after the Roles and Responsibilities of the CME and CPA implementing entity with respect to record keeping and monitoring were sufficiently clarified and have been checked against the CME management manual /24/. Please refer to question 10.1.2 for more details.	CL-9	OK
10.1.7	Does the system include measures for continual improvements of the PoA management system?	Please refer to CAR 7, as the operational and management plan in the GSP PoA-DD did not include measures regarding continual improvements of the PoA management system. CAR 7 was closed after section C in the PoA-DD was revised and the CME management manual /24/ was provided, which include a section on 'Continuous Improvement' and sufficiently prescribes the procedures for improving the PoA management system.	CAR-7	OK

Conclusion

ERM CVS has assessed the operational and management arrangements which have been established by the CME in order to determine that these arrangements are suitable for the PoA being validated. The arrangements are considered to be sufficient to ensure that the CME will have control of all records and information related to the implementation of individual CPAs and will be in a position to ensure each CPA is being operated in accordance with the specific requirements of the programme.

10.2 PoA Sampling Plan

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
10.2.1	Has the CME chosen to produce a sampling method/procedure for use by DOEs rather than have all	N/A. Since the CPAs to be included in the PoA will be large-scale renewable energy projects, the CME has opted for a verification method that does not use sampling but verifies each CPA.	OK	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	CPAs verified? If so is the method statistically sound and suitable for the PoA?			

Conclusion

No sampling will be involved in the proposed PoA.

11 Validation Findings - Monitoring plan of Generic CPAs

ERM CVS evaluated the monitoring plan for the PoA and generic CPA to ensure that it is based on the approved monitoring methodology that has been applied. As per the VVS, ERM CVS applied a two-step process, based on review of the documented procedures, interviews with relevant personnel, project plans and any physical inspection, to assess:

- a) *Compliance of the monitoring plan with the approved methodology:*
 - (i) By means of document review, identify the list of parameters required by the selected approved methodology;
 - (ii) Confirm that the monitoring plan contains all necessary parameters, that they are clearly described and that the means of monitoring described in the plan complies with the requirements of the methodology.
- b) *The Implementation of the monitoring plan, taking into account:*
 - (i) Whether the monitoring arrangements described in the monitoring plan are feasible within the generic CPA design;
 - (ii) Whether the means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the proposed CPAs and PoA can be reported ex post and verified.

11.1 Compliance of the monitoring plan with the approved methodology

ERM CVS validated whether the monitoring plan for a generic CPA in the PoA-DD includes all parameters necessary for monitoring of this type of project in accordance with the approved methodology that has been applied for the generic CPA. ERM CVS checked whether the parameters are clearly described and the means of monitoring described in the plan complies with the requirements of the methodology.

Completeness of monitoring parameters

The monitoring parameters required by the methodology and applicable tools are:

Parameter Name	Parameter Description	Is the parameter appropriately included in the Monitoring Plan? (including justification and substantiation of information, data and evidence)
EG _{facility,y}	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y	The parameter is appropriately included in the Monitoring Plan and is in accordance with the methodology (ACM0002 Version 13.0.0). The quantity of electricity supplied to the grid will be measured continuously and recorded monthly. The basic measurement period shall be carried out in line with PPA.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
11.1.1	Are all required parameters included in the monitoring plan?	<p>Yes, the CPA is only required to measure EG_{facility,y} in accordance with the methodology.</p> <p>CL 11 was raised: Please clarify if CPAs might have on-site consumption of fossil fuels due to the project activity.</p> <p>CL 11 was closed after the revised PoA-DD /1/ has been amended to clarify that CPAs will not include any combination of both renewable and non-renewable components, and will not have fossil fuel consumption as part of project activities</p>	GL 11	OK

Remaining parameters are not relevant for this PoA, as the PoA does not involve hydro power projects.

Conclusion

The monitored parameters included in the monitoring are complete and appropriate for monitoring of the generic CPA. In ERM CVS's opinion, the PPs are able to implement the monitoring plan.

Compliance of monitoring

For each parameter, ERM CVS has validated whether it has been addressed in accordance with the baseline and monitoring methodology.

Monitored Parameters	EG _{facility,y}
Parameter Description correct?	Yes
Description in line with methodology?	Yes
Data unit correctly expressed?	Yes
Measurement method correctly described?	Yes
Measurement and recording frequency correctly described?	Yes
Correct reference to standards?	Yes
Indication of accuracy provided?	Yes
QA/QC procedures described?	Yes
QA/QC procedures appropriate?	Yes

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
11.1.2	Are all required parameters appropriately monitored in accordance with the methodology (including applicable tools)?	<p>CL 10 was raised, as Section B.7.1 of the generic CPA part of the GSP PoA-DD did not include reference to minimum accuracy and applicable standards</p> <p>ERM CVS reviewed the revised PoA-DD /1/ and confirms that the Generic CPA section now includes reference to meter accuracy levels and applicable standards. Accuracy requirements, and calibration frequency, will be required to be in compliance with the Code of practice electricity metering NRS 057:2009 /23/. The standard is relevant applicable national standard.</p> <p>CL 10 is closed.</p>	GL-10	OK

Conclusion

The means of monitoring all relevant monitored parameters complies with the requirements of the methodology, including applicable tools.

11.2 Implementation of the monitoring plan

ERM CVS evaluated the feasibility and sufficiency of the monitoring plan for the generic CPAs – all generic CPAs will use the same monitoring plan. The key components of the monitoring plan are as follows.

Operational and management structure:

CPA implementing entities will be responsible for the aspects related to on-site monitoring such as collecting monitoring data, training of personnel responsible for gathering and recording monitoring data, storage of data, and calibration and maintenance of the facility metering installation. The CPA implementing entity will appoint a monitoring officer who will be in charge of the CPA's monitoring responsibilities as described above. The CPA implementer will regularly submit monthly electricity generation records to the CME accompanied by the respective copies of invoices and records for sold electricity.

The CME will carry out a quality control on the data received and store them in the electronic database. The CME will prepare monitoring reports for submission to the DOE for verification on a regular basis.

- Preparation of monitoring report

Equipment:

The CPA implementers will provide Facility Metering installation (main meter), and National transmission company (currently ESKOM) or distribution company, as applicable, will provide a System Main Metering Installation System (it will serve as a back-up meter). The exact locations where metering equipment will be installed may differ among CPAs. In most cases, the facility meter is installed at the Delivery Point with the electricity grid as agreed with the national transmission company (NTC) or distributor, as applicable, and the system meter will be installed adjacent to the facility metering installation in accordance with the transmission agreement or distribution agreement, as applicable.

Quality Assurance and Quality Control (QA/QC) of equipment and data:

Meters will be calibrated and meter readings will be crosschecked with actual invoices sent by project owners to the grid company and proof of payments done by the buyer of electricity. Description of emergency procedures is included in case one or both meters fail.

Given that specific monitoring plans will be developed on a CPA level, the framework for QA/QC procedures set out in the PoA DD is considered sufficient to ensure that emissions reductions can be monitored and reported accurately.

Feasibility of the monitoring plan:

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
11.2.1	Are the arrangements described in the plan feasible and practical? Please consider: (a) operational and management structure, including responsibilities (b) Plans for maintenance and calibration of equipment (c) Plans for QA/QC of equipment and data (d) Installation of monitoring equipment (whether in place, or planned)	At the time of the draft report, this was to be confirmed following closure of CL 9 and CL 10. CL 9 and CL 10 were closed following clarifications and revisions in the PoA-DD /1/ by the PP. Please refer to questions 10.1.2 and 11.1.2 for further details. ERM CVS confirmed that revisions in the final version of PoA-DD /01/ is feasible and practical, where the Operational and Management manual /24/ includes sufficient detail on the operational and management structure, including responsibilities, the plans for maintenance and calibration of equipment, the plans for QA/QC of equipment and data, and the installation of monitoring equipment (whether in place, or planned).	CL-9 CL-10	OK

Conclusion

Based on the validation activities performed, ERM CVS concludes that:

- (a) The monitoring plan of a generic CPA is fully in compliance with the requirements of the methodology;
- (b) The monitoring arrangements described in the monitoring plan of a generic CPA are feasible ;
- (c) The means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the proposed CPAs can be reported ex post and verified.

The assessment conducted by ERM CVS is by means of review of the documented procedures, interviews with relevant personnel, and a visit to the site of the first real case CPA. In ERM CVS's opinion, the CME is able to implement the monitoring plan.

12 Validation Findings – Sustainable Development, Local Stakeholder Consultation and Environmental Impact

12.1 Sustainable Development

As per VVS section M, ERM CVS evaluated whether the letter of approval by the DNA of the host Party confirms the contribution of the proposed CDM PoA to the sustainable development of the host Party.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
12.1.1	Does the LOA from the Host Party confirm that the PoA contributes to the sustainable development of that country?	The host country LoA was not provided at draft report stage. Please refer to CAR 1 The LoA has been subsequently been provided to the DOE /2/ and CAR 1 is closed. In the LoA, the Host Party does confirm that the PoA contributes to the sustainable development of South Africa.	CAR-1	OK

Conclusion

The LOA from the Host Party confirms that the PoA contributes to the sustainable development of that country

12.2 Local Stakeholder Consultation

The stakeholder consultation will be conducted on a CPA level. This is appropriately described in the PoA-DD.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
12.2.1	Have comments from local stakeholders that can reasonably be considered relevant been invited prior to the publication of the PoA-DD on the UNFCCC website?	No – local stakeholder consultation is undertaken at CPA level. This is considered appropriate as possible implications for local stakeholders can vary substantially depending on type of technology and location of a CPA.	OK	OK
	Is the summary of comments received as provided in the PoA-DD complete?	N/a – comments by local stakeholders will be invited at CPA level.	OK	OK
	Has due account been taken of any stakeholder comments received and is this adequately and clearly described in the PoA-DD?	N/a – comments by local stakeholders will be invited at CPA level.	OK	OK

Conclusion

The CME has decided that comments by local stakeholders will be sought at the CPA level. This is described and reflected in the PoA-DD.

ERM CVS has therefore validated that the local stakeholder consultation procedures are in line with the CDM requirements.

12.3 Environmental Impacts

Environmental impacts are assessed on a CPA level. This is appropriately described in the PoA-DD.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
12.3.1	Has the PP conducted an environmental impact assessment if required to do so by the host Party, in accordance with the Party's procedures, and is this described adequately in the PoA-DD?	No – analysis of environmental impacts is undertaken at CPA level. This is considered appropriate as possible environmental impacts can vary substantially depending on type of technology and location of a CPA.	OK	OK
	Does the PoA include transboundary impacts, and if so are these impacts considered significant by the PPs or Host Party?	N/a – analysis of environmental impacts is undertaken at CPA level.	OK	OK

Conclusion

The level at which environmental impacts are assessed is suitable and properly explained.

12.4 Public funding

ERM CVS also evaluated whether the information relating to public funding in the PoA-DD Annex 2 has been correctly presented.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
12.4.1	If the PoA involves public funding from an Annex 1 country, have the annex 1 parties involved provided an affirmation that such funding does not result in a diversion of official development assistance?	No public funding has been used for developing the PoA, and eligibility criteria include conditions to check that either no public funding is used, or public funding does not result in diversion of ODA.	OK	OK
	Is the information provided on public funding (PoA-DD, Annex 2) provided in compliance with the actual situation or planning?	Yes, this has been confirmed through interviews and checking of eligibility criteria.	OK	OK

Conclusion

Public funding will be assessed and validated on a CPA level to ensure that if the CPA involves public funding from an Annex 1 country, the annex 1 parties involved provided an affirmation that such funding does not result in a diversion of official development assistance

Appendix A: Documents and Interviewees

A.1 DOCUMENT LIST

Reference number	Date	Document Title and version number (if applicable)
01	29 May 2012 16 December 2012	PoA Design Document for the proposed PoA Version 01 (for GSP) Version 04 (final).
02	31 October 2012	Host Country Letter of approval for the proposed PoA issued by the South African Department of Energy (South Africa's Designated National Authority)
03	25 July 2012	Modalities of Communication for the proposed PoA.
04	18 May 2012 07 December 2012	Grid Emission Factor Calculations Spreadsheet version 01 Spreadsheet version 03.1
05	06 May 2011	Integrated Resource Plan for Electricity 2010-2030
06	26 March 2009	South Africa Renewable Energy Feed-In Tariff (REFIT). Regulatory Guidelines
07	July 2009	NERSA Consultation Paper. Renewable Energy Feed-In Tariff Phase 2
08	29 October 2009	National Energy Regulator of South Africa (NERSA). Decision in the matter regarding Renewable Energy Feed-In Tariff Phase 2
09	04 May 2011	Electricity regulation on new generation capacity
10	March 2011	Review of the Renewable Energy Feed-In Tariffs Consultation Paper
11	03 August 2011	Tender DOE/001/2011/2012 (Request for proposals under the Independent Power Producers programme)
12	-	Profile of Carbon Africa Limited
13	27 January 2012	Carbon Africa Limited Business Trading Permit
14	10 March 2009	Carbon Africa Limited Certificate of Incorporation
15	2011	Eskom annual report 2011
16	2007	IPCC Guidelines for National Greenhouse Gas Inventories – Volume 2, Chapter 2
17	03 August 2011	<u>South African Department of Energy: Independent Power Producers - Request for Proposal Rules and Criteria (for tender DOE/001/2011/2012)</u> RFP- PART A - General Requirements & Rules RFP- PART B - Qualification Criteria RFP- PART C - Evaluation Criteria
18	October 2011	Transmission Ten-Year Development Plan 2012 - 2021

Reference number	Date	Document Title and version number (if applicable)
19	2007 - 2009	Monitoring reports of CDM project No. 0446 PetroSA Biogas to Energy Project: http://cdm.unfccc.int/Projects/DB/PriceWaterhouseCoopers1148482596.97/view
20	2009	Monitoring reports of CDM project No. Bethlehem Hydroelectric project: 08 Oct 2009 - 31 Dec 2009
21	2007 - 2011	Monitoring reports of CDM project No. Durban Landfillgas-to-electricity project – Mariannhill and La Mercy Landfills 02 Nov 2007 - 28 Feb 2010 01 Mar 2010 - 30 Sep 2011
22	2009	Monitoring reports of CDM project No. Durban landfill gas Bisasar Road project: 26 Mar 2009 - 31 Aug 2009
23	2009	South African National Standard - Code of practice for electricity metering
24	07 September 2012	PoA Management & CPA Inclusion Manual
25	January 2011	a. The Future of South African Coal: Market, Investment and Policy Challenges b. SAWEA email – Cape Wind Projects and other R1 projects c. Coastal Environmental Services – Mineral and Petroleum Resources Act
26	2010	Environmental Impact Assessment Regulations
27	October 2012	Modalities of Communication Validation Documents: a. Information on Climate Corporation Emissions Trading GmbH b. Michael Baden (Passport copy) c. Adriaan Tas (Passport copy) d. Matthew Woods (Passport copy) e. Carbon Africa Ltd Board Resolution
28	2006	Electricity Supply Statistics – Nersa - 2006
29	25 November 2011	Standard "Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities", version 01, EB 65 Annex 3
30	23 January 2012	Levelized Cost of New Generation Resources in the Annual Energy Outlook 2011. Released January 23, 2012. Report of the US Energy Information Administration (EIA) of the U.S. Department of Energy
31	18 April 2012	Bloomberg New Energy Finance: CLEAN ENERGY POLICY & MARKET BRIEFING
32	May 2011	EDP Renovaveis: Investor Presentation

Reference number	Date	Document Title and version number (if applicable)
33	March 2009	The European Wind Energy Association: The Economics of Wind Energy
34	2011	PV Power Systems Programme: TRENDS IN PHOTOVOLTAIC APPLICATIONS Survey report of selected IEA countries between 1992 and 2010
35	01 September 2009	Europe Offshore: Offshore costs - No consensus on offshore costs
36	August 2011	Renewable Energy Generation: "Delivering the Strategy"
37	2010	International Energy Agency (IEA) Technology roadmap: Solar photovoltaic energy (Tech. Rep.). IEA (2010)
38	2012	Renewable Energy Technologies: Cost Analysis Series for Solar PV
39	2012	Republic of South Africa: Taxation Laws Amendment Bill (Minster of Finance)
40	25 November 2011	CDM Project Standard, version 01 ¹

A.2 INTERVIEWS

Reference	Name	Title & Organisation	Main topics discussed
IV1	Adrian Tas	Director, Carbon Africa	PoA aims, eligibility criteria, application of methodology, additionality
IV2	Carlos Guerrero	Project manager, Carbon Africa	Eligibility criteria, application of methodology, additionality, PoA-DD completion
IV3	Howard Ramsden	CEO, Terra Power Solutions	PoA aims, portfolio of potential CPAs, first real case CPA, bidding process, permits
IV4	Wilhelm Niehaus	Land owner, Haverfontein project	CPA development, stakeholder consultation
IV5	Leon Unterslack	Financial Director, Terra Power Solutions	Financial analysis

¹ Please note that although version 01 is used, the POA is compliant with version 02.1

Appendix B: Remediation Form

Corrective Action Requests (CARs), Clarification Requests (CLs) and Forward Action Requests (FARs)

Corrective Action Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
CAR 1. Letter of Approval has not been provided	5.3.1	Letter of Approval was received on the 16/10/2012 and submitted to the DOE.	The LoA was received and checked by ERM CVS. Please refer to section 5.1 for details on how participation requirements were validated. CAR 1 is closed.
CAR 2. Modalities of Communication have not been provided	5.4.1	<p>Modalities of Communication have been sent to the DOE on 6 September 2012.</p> <p>Further evidences has been provided for the validation of the MoC in line with the VVS:</p> <ul style="list-style-type: none"> - Corporate Identity of Climate Corporation: Business license, Ref. 23.a. This document also shows the shareholders and managing director. - Personal identity of director of Climate Corporation Emissions Trading and signatory of MoC. Passport picture Ref. 23.b. As Director and Shareholder, the signatory is an authorized signatory. - Personal identities of directors of Carbon Africa and signatories of MoC. Passport pictures Ref. 23.c and 23.d. <p>Carbon Africa's Board Resolution on Authorized Signatories. Ref. 23.e</p>	<p>ERM CVS has reviewed the Modalities of Communication (MoC) against information in the revised PoA-DD and can confirm that the PoA name and PP names are consistent, correct version of the MoC form is used, and the form is filled in correctly.</p> <p>In line with the VVS paragraph 54, ERM CVS checked City of Nairobi's certificate of a Single Business granted to Carbon Africa Limited to confirm the corporate identity of the CME. ERM CVS also validated the corporate identity of Climate Corporation Emissions Trading GmbH and the personal identities, including specimen signatures and employment status, of the authorised signatories of both project participants. Please refer to section 5.4 for further details.</p> <p>CAR 2 is closed.</p>

Corrective Action Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
CAR 3. The contact details of the project participant Climate Corporation Emissions Trading GmbH have not been included in Annex 1 of the PoA-DD. Please correct	5.4.1	Contact details for Climate Corporation Emission Trading GmbH added in version 2 of the PoA-DD, appendix 1.	ERM CVS reviewed the revised PoA-DD and confirmed that the contact details for Climate Corporation Emission Trading GmbH have been added under appendix 1. The contact details were checked against the completed MoC and are confirmed to be consistent. CAR 3 is closed.
<p>CAR 4. Provisions of ACM0002 on its application for PoAs have not been sufficiently considered or are not clear:</p> <ul style="list-style-type: none"> a) Not all provisions on parameters related to investment climate and ranges of costs and revenues have been considered b) It is not clear why conditions on installed capacity and load factor are included as part of additionality-related eligibility criteria, c) It is not clear on what basis the threshold values were selected. d) Requirement is not included that eligibility criteria related to costs, revenues and investment climate shall be updated every two years 	6.1.5	<p>a) All parameters related to investment climate and ranges of costs and revenues have been included in the revised version of the PoA-DD. Since the mentioned parameters are closely related to the investment analysis, they have been included as part of the eligibility criteria for proving additionality. An update of the eligibility criteria in version 3 of the PoA-DD should allow the DOE to confirm all the provisions in each eligibility criterion.</p> <p>b) Initially, the conditions on installed capacity and load factor were included as additionality related eligibility criteria because both could have an impact on the financial viability of the project, the first through economies of scale and the second because the plant load factor is the main driver of revenue in a renewable energy project. In version 2 of the PDD, the conditions on installed capacity and load factor have been included as technology-based eligibility criteria (para 14c of the PoA Standard, EB65, Annex 5). The rationale for including them as technology based eligibility criteria is because they specify the technology used and the level and type of service provided.</p> <p>c) Further justification has been provided in version 3 of the PoA on the threshold values that are used in the definition of the eligibility criteria. The threshold values are either based on the values used under the <i>Request for qualifications and proposals for new grid capacity under the IPP programme</i> or on information and experience with wind energy and solar PV projects in other parts of the world. Since there is no large-</p>	<p>ERM CVS reviewed the eligibility criteria in the revised PoA-DD</p> <ul style="list-style-type: none"> a) The DOE can confirm that all the provisions related to the investment climate from the methodology have been considered. Please refer to section 7.1 for further details b) ERM CVS can confirm that the conditions relevant to installed capacity and plant load factor stipulated by the applied methodology have been included as part of eligibility criteria related to Specifications of technology/measure. This is in line with the Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for PoAs /29/. c) Further justification has been provided in the revised PoA-DD on the threshold values that are used in the definition of the eligibility criteria. The threshold values are either based on the values used under the Request for qualifications and proposals for new grid capacity under the IPP programme or on information and experience with wind energy and solar PV projects in other parts of the world. Since there is no large-scale operational wind farm or solar

Corrective Action Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
		<p>scale operational wind farm or solar PV plant in Sub-Saharan Africa, it was not possible to derive data and information from the African context, however, where possible, experience from Africa has been taken into consideration in the formulation of the eligibility criteria and threshold values.</p> <p>d) The requirement to update the eligibility criteria related to costs revenues and investment climate has been included in section B.2 of version 2 of the PoA-DD and is also specifically mentioned under the relevant eligibility criteria.</p> <p>In the revised version of the PoA-DD, a clear distinction is made between the eligibility criteria and explanation on how to arrive at the eligibility criteria. In section B.2 of Part I the PoA-DD, both the explanation and the eligibility criteria are provided. In section B.5 of Part II of the PoA-DD, only the eligibility criteria are provided without the explanation on how they were arrived at. In this way, the eligibility criteria and the explanations can be easily distinguished.</p> <p>All other eligibility criteria have been formulated in such a way in the revised PoA-DD so as to ensure that each eligibility criteria is applicable and can be assessed for every CPA under the PoA..</p>	<p>PV plant in Sub-Saharan Africa, it was not possible to derive data and information from the African context, however, where possible, experience from Africa has been taken into consideration in the formulation of the eligibility criteria and threshold values. For validation of the selected ranges please refer to section 7.1</p> <p>d) The requirement to update the criteria related to the investment climate every two years has been included.</p> <p>CAR 4 is closed.</p>
<p>CAR 5. Eligibility criteria on additionality are not sufficiently objective and comprehensive to permit the assessment whether CPAs to be included into the PoA are additional:</p> <p>a) Part of the provisions of the ACM0002 for application for PoAs have not been considered (refer to CAR 4)</p>	6.1.6	<p>a) All provisions of ACM0002 for application for PoAs has been considered in version 2 of the PoA-DD. The project proponent has updated the eligibility criteria to include all parameters related to investment climate and ranges of cost of revenues, including objective justification for values and ranges used. In addition, the project proponent has provided a standardized approach to the implementation of the investment analysis which will be applied by all the CPAs that will be included in the PoA.</p> <p>The reference "investment analysis spreadsheet" does not</p>	<p>ERM CVS reviewed the additionality-related eligibility criteria in the revised PoA-DD /1/. Wind and solar PV generic CPA types were further split into CPA types that apply first of its kind barrier, and CPA types that apply investment analysis.</p> <p>ERM CVS reviewed the eligibility criteria in the revised PoA-DD /1/ and checked against the provisions of ACM0002 on its application to PoAs. Please refer to sections 7.1 and 9.4 for details on how separate new</p>

Corrective Action Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
b) It is not clear how benchmark analysis will be applied. E.g. what indicator would have to be used for financial analysis, what benchmark will be acceptable?		<p>refer to a template but to the spreadsheet on the calculations that will be provided to the DOE for each CPA. A template is not ideal as some of the parameters are CPA specific.</p> <p>b) As is further explained in version 2 of the PoA-DD, CPAs will use the pre-tax, nominal project IRR or the post-tax, nominal equity IRR as a benchmark for proving additionality. Version 2 of the PoA-DD contains detailed procedures, including standardized values, for the calculation of the benchmark. The standardized procedures will be applied to all CPAs included in the PoA.</p> <p>Based on the revision regarding First-of-its-Kind in the latest version of the Tool for the demonstration and assessment of additionality (version 07), and updates in the Guidelines on additionality of First-of-its-kind project activities (version 02.0), the PoA DD version 04 has incorporated the approach to prove additionality based on first-of-its-kind (Foik).</p> <p>Therefore the project proponent has revised the eligibility criteria to include the first-of-its-kind option.</p> <p>Two new generic CPA types were formulated in line with the provisions in ACM0002 which require project proponents to define different CPA types for projects that are different with regard to demonstration of additionality:</p> <ul style="list-style-type: none"> Greenfield wind power plants/units in South Africa applying first-of-its-kind barrier Greenfield solar PV plants/units in South Africa applying first-of-its-kind barrier 	<p>criteria were validated.</p> <p>ERM CVS reviewed the eligibility criteria in the revised PoA-DD /1/. The PoA-DD describes a framework how benchmark analysis has to be applied by CPAs. The CPAs will use the pre-tax, nominal project IRR or the post-tax, nominal equity IRR as a benchmark for proving additionality. The revised PoA-DD contains clear procedures and key conditions for the calculation of the benchmark that will have to be applied to all CPAs included in the PoA. The procedures and conditions are validated in section 9.4 of the validation report.</p> <p>CAR 4 was closed (please refer to Question 6.1.5 above), and the revisions resolved the issues raised in CAR 5 (please see section 9.4 for details), therefore CAR 5 is also closed.</p>
CAR 6. Power units included in a sample group for calculating BM correspond to	7.5.2	Calculations on the build margin have been corrected as per	ERM CVS reviewed the revised PoA-DD and the revised Grid Emissions Factor spread sheet against the Tool to

Corrective Action Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
the sample group $SET_{\text{sample-DEM} \rightarrow 10\text{yrs}}$ but option A1 from Step 4(a) is used for calculating $FE_{EL,m,y}$. This is not in accordance with the Tool, which requires option A2 to be used in such case		CAR6 and in line with the tool.	calculate the emissions factor for an electricity system, and can confirm that Option A2 is now correctly used in Step 4(a). CAR 6 is closed.
CAR 7. Operational and management system does not cover the following provisions of Paragraph 17 of EB 65 Annex 3: records of arrangements for training and capacity development for personnel, procedures for technical review of inclusion of CPAs, and measures for continual improvements of the PoA management system	9.1.1	The operational and management system has been updated to cover the provisions of para 17 of EB 65, Annex 3 in version 2 of the PoA-DD. A CME management manual has also been prepared and shared with the DOE.	ERM CVS reviewed the revised PoA-DD, and the "PoA Management and CPA Inclusion Manual", and confirms that Section C: Management System has been amended to include: <ul style="list-style-type: none"> - Records of arrangements for training and capacity development for personnel - Procedures for technical review of inclusion of CPAs - Measures for continuous improvements of the PoA management system <p>These sections provide sufficient information to meet the provisions of Paragraph 17 of EB 65 Annex 3.</p> <p>The CME management manual provides a synopsis of all the operational and managements arrangements and cover all provisions stipulated by the Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities /29/.</p> <p>CAR 7 is closed.</p>

Clarification Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion

Clarification Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
CL 1. The PoA description in the PoA-DD is not clear on how applicable national and/or sectoral policies and regulations within the chosen boundary have been considered in defining the PoA boundary and its goal/stated aim	5.7.2	<p>The goal/stated aim of the PoA has been better embedded in the national and sectoral policies with regard to renewable energy projects in South Africa in section A.2 of version 2 of the PoA. Reference is made to the REFIT programme and the IPP Procurement Programme (bidding programme) and a number of barriers to the development and implementation of renewable energy projects have been provided. In this context, the stated goal of the PoA is promote renewable energy projects by increasing their financial viability by facilitating access to revenues from carbon credits.</p> <p>Further evidence on the change of requirements are provided as Ref. 27.3 and 27.4. Also, delays on the IPP programme can be evidenced as per the website on the programme notice <i>"Bidders are advised that the Department has revised and updated its timetable for the IPP Procurement Programme as set out in clause 10 of Part A of the RFP. The Department has identified the need to update the timetable as a result of market constraints to achieving Financial Close in respect of the First Bid Submission Phase projects and the Government's delay in procuring the various consents it is required to obtain. The Department regrets this delay. The updated key milestone dates in respect of the first, second and third Bid Submission Phases are set out under the heading 'Milestones' below."</i> Accessed on 12/10/2012 http://www.ipprenewables.co.za/</p>	<p>ERM CVS reviewed the revised PoA-DD and confirms that the section "Policy/measure or stated goal of the PoA" has been sufficiently amended to show how national and sectoral policies and regulations have been considered in defining the PoA boundary and its goal.</p> <p>Renewable Energy Feed-in Tariff (REFIT) and the IPP Procurement Programme are referenced to describe the uncertainties in the South Africa independent power producing market. The described changes in the regulations from REFIT to IPP procurement programme were validated based on review of the South Africa Renewable Energy Feed-In Tariff (REFIT) Regulatory Guidelines /06/, NERSA Consultation Paper "Renewable Energy Feed-In Tariff Phase 2" /07/, NERSA Decision in the matter regarding Renewable Energy Feed-In Tariff Phase 2 /08/, Review of the Renewable Energy Feed-In Tariffs Consultation Paper /10/, and Tender DOE/001/2011/2012 (Request for proposals under the Independent Power Producers programme) /1//, as well as confirmed it based on interview with NERSA representatives.</p> <p>Changes to the connection requirements by Eskom, uncertainties in the rezoning rules and new requirements on mineral permits have been confirmed in interview with Terra Power Solutions, the project development partner of the CME, and 3rd party evidence on these changes has been provided.</p> <p>CL 1 is closed.</p>
CL 2. Description of a generic CPA is not sufficient: a) Typical layout has not been	5.7.3(a)	<p>Section A.6 has been corrected to add a more comprehensive and detailed description of the technologies included in a typical CPA. The specific issues have been addressed as</p>	<p>ERM CVS reviewed the revised PoA-DD and confirms that:</p> <p>d) The Wind power and Solar PV sections in</p>

Clarification Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
<p>included with main equipment and installations, including key monitoring equipment</p> <p>b) Description is not clear on what details will have to be provided for each CPA in order to provide clear description of actual CPAs</p> <p>c) Information on technology transfer is not included</p>		<p>follows:</p> <p>a) Typical layout added, together with a general description of main equipment, specially monitoring equipment has been included in section A.6.</p> <p>b) A description has been included in section A.6 of version 2 of the PoA-DD on what details will have to be provided by each CPA.</p> <p>c) A general description of the technology transfer has been added. More specific case by case technology transfer will be described for each CPA separately at CPA level.</p>	<p>section A.6 have been amended to include typical layout, including information regarding the typical equipment/installations and key monitoring equipment.</p> <p>e) Section A.2 now includes requirements for each CPA to provide the following details, which are sufficient to provide a clear description of actual CPAs:</p> <ul style="list-style-type: none"> o The installed capacity o Technical specifications of the equipment that will be installed o Plant load factor and electricity generation data o Details about the electricity collection and transmission infrastructure o Details about the metering system <p>f) A brief description of technology transfer has been included. As technology provider and arrangements may differ between the CPAs it is suitable that more detailed information is specified at CPA level.</p> <p>CL 2 is closed</p>
CL 3. Please clarify how CME will ensure CPAs meet eligibility criteria on double counting and ODA	6.1.2	<p>In order to avoid double counting, the CME will take the following measures:</p> <p>1. The CME will confirm that the CPA has not yet been included in another Programme of Activities or been registered as a single CDM project through:</p> <ul style="list-style-type: none"> • A signed confirmation letter from the CPA implementing entity that it was not yet included in another Programme of Activities or has been 	<p>ERM CVS reviewed the revised PoA-DD and confirms that procedures includes checks to be carried out by the CME to validate confirmations provided by CPA operators on how they meet criteria on ODA and voiding double counting.</p> <p>The procedures have been confirmed by reviewing the CME management manual. The criteria on ODA and avoiding double Counting are now sufficiently clear and</p>

Clarification Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
		<p>registered or intends to be registered as a single CDM project.</p> <ul style="list-style-type: none"> A check by the CME on the CDM website² that the project has not yet been included in another Programme of Activities or has been registered as a single CDM project in line with the procedures as outlined in section and the CME management manual. The check by the CME will be presented in a signed confirmation letter from the CME. <p>2. The CME will confirm that there is no geographical overlap between the CPA and another single CDM project or CPA of the same type through:</p> <ul style="list-style-type: none"> A project area map provided by the project proponent. This could be in the form of a map in the EIA report, feasibility study/technical description or other relevant documentation (e.g. GIS map). A check by the CME on the CDM website that the location of the CPA does not overlap with other CDM projects (CPAs or single CDM projects) in the area in line with the procedures as outlined in section and the CME management manual. The check by the CME will be presented in a signed confirmation letter from the CME. <p>The above measures have been included as eligibility criteria 2.1-2.4 in version 2 of the PoA-DD and have also been described in the CME management manual.</p> <p>In terms of ODA, the CME will first confirm with the CPA</p>	<p>verifiable.</p> <p>CL 3 is closed.</p>

² <http://cdm.unfccc.int/>

Clarification Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
		whether or not public funding from an Annex I has been received. If the CPA has not received public funding, it will issue a signed confirmation letter that no public funding from an Annex I country was received. In case the CPA did receive public funding, a confirmation letter from an Annex I country will be obtained confirming that the public funding does not result in a diversion of ODA.	
CL 4. Please clarify if/how performance specifications and compliance with testing/certifications have been considered in developing eligibility criteria for both types of CPAs, and what size of installations will be eligible	6.1.3	<p>The revised PoA-DD includes an eligibility criterion on performance specifications and compliance with testing/certifications in line with the requirements of the IPP Procurement Programme.</p> <p>The, eligibility criteria have been updated so a CPA shall meet all criteria at inclusion stage, and cannot be deferred to verification stage. Since the required certification as per the IPP procurement programme might not always be available at the time of inclusion, the eligibility criteria allows certification that an agreement between the CPA implementer and the CME will assure that the certification will be provided before construction.</p>	<p>ERM CVS reviewed the revised PoA-DD and can confirm that eligibility criteria include a range of installed capacity that would be eligible under the PoA, and requirements for certification. The range of installed capacity and certification standard were validated against the Part B of the <i>Request for qualification and proposals for new generation capacity under the IPP procurement programme</i>. For further details please refer to section 7.4 of the validation report</p> <p>CL 4 is closed.</p>
CL 5. Please clarify what criteria the CME will apply for assessing credibility of project documentation/feasibility studies provided as evidence on compliance with eligibility criteria	6.1.3	<p>The following types of documentation will be accepted as being objective and credible:</p> <ul style="list-style-type: none"> • Documentation that has been prepared by an experienced third party • Documentation that has been approved or issued by South African governmental authorities • Documentation that carries an official signature from the CPA implementing entity, CME or project 	<p>ERM CVS reviewed the revised PoA-DD /1/ and confirmed that criteria have been included for assessing the credibility of project documentation/feasibility studies to be used as evidence for showing compliance with the PoA eligibility criteria. The requirements are considered sufficient to assess at the CPA level whether evidence is objective and reliable.</p> <p>CL 5 is closed.</p>

Clarification Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
		<p>participant</p> <ul style="list-style-type: none"> Documentation that has been submitted to or received from financing institutions like banks and equity providers Documentation submitted for official purposes such as documents submitted to South African authorities as part of the <i>Request for qualifications and proposals for new generation capacity under the IPP procurement programme</i> <p>The above criteria have been included in section B.2 of version 2 of the PoA-DD.</p> <p>As documentation with an official signature from the CPA implementing entity, CME or project participant may not be sufficiently objective on its own for some cases, so those will only be valid for the following criteria:</p> <ul style="list-style-type: none"> - Double counting. Criteria 2.1 to 2.4. The nature of these criteria can only be evidenced by signed confirmations from the CME and the CPA implementing entity. However, the veracity of those are easily demonstrable by the DOE. - Investment decision date. Criterion 5.3. The investment decision is taken by the project developer and therefore its proof is normally based on Board Resolution or Board Minutes. However, this decision can be backed up by independent third party studies such as energy resource assessments. - Stakeholder consultation. Criterion 6.2. When the stakeholder consultation is hold strictly for CDM 	

Clarification Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
		<p>purposes, the consultation and its reports are normally taken by the CME and therefore it must be accepted. Signed participation lists and pictures should support those reports.</p> <ul style="list-style-type: none"> - ODA diversion. Criteria 7.1. When there is no use public funding by the project developer, its non-existence can only be evidence by a signed confirmation by the project developer. - The agreement between the CME and the CPA for participation in the PoA is a legally binding document and therefore it can be used for confirmation purposes. <p>It is the understanding of the CME that those specific evidences for the eligibility criteria do not go against any of the CDM rules on third party evidence.</p>	
<p>CL 6. Criterion on the starting date is not clear:</p> <p>a) The criterion refers that the start of the CPA occurs after the start date of the validation of the PoA, and that it will be evidenced by the agreement with the turbine supplier. However, the starting date of the PoA is defined in the PoA-DD as 01 January 2013, which implies that a CPA could be included that starts before the starting date of the PoA.</p> <p>b) Agreement with equipment manufacturer is suggested as main evidence of compliance.</p>	6.1.4	<p>a) Starting date of the PoA has been changed to 02/06/2012, which is the start date of validation. In that way, the start date of any CPA will not be before the starting date of the PoA, as it cannot be before the start of validation.</p> <p>b) Criterion on the starting date has been modified to include that, in case of the agreement with equipment supplier has not been signed by the time of submission for registration or inclusion, the starting date will necessarily be in the future, and this proves that starting date is after 02/06/2012. It is further clarified on the PoA-DD that if an earlier substantial agreement such as lending agreement is signed before the contract with the equipment supplier, this one will determine the start date of the CPA.</p>	<p>ERM CVS reviewed the revised PoA-DD /1/ and confirms that the PoA start date has been changed to the date at which the PoA validation started (02/06/2012). As PoA is a framework (without CPAs included yet) and does not involve investments into equipment, validation of the PoA is considered as implementation and therefore the identified date complies with the CDM Glossary of Terms.</p> <p>The eligibility criterion on CPA start date has been amended. The criterion states that the CPA starting date must be after the starting date of the POA and it suggests that for any CPA, the starting date is a date when an agreement with an equipment manufacturer or construction/operation services is signed – the earliest of these (if separately done) will be taken as the CPA start date.</p>

Clarification Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
However, based on document review for the first real case CPA, an agreement with the turbine supplier might not yet be available at the time of CPA inclusion.			CL 6 was closed.
CL 7. Section B.2 of the generic part of the PoA-DD discussed methodology applicability conditions that are relevant for this PoA but it is not clear how it will be ensured that subsequent CPAs that are to be included into the PoA meet these methodology applicability conditions	7.2.1	An eligibility criterion has been included in version 2 of the PoA-DD to ensure that all CPAs demonstrate their compliance with the applicability criteria of ACM0002 (eligibility criterion 5).	ERM CVS reviewed the revised PoA-DD and confirms that an eligibility criterion is now included requiring that "The CPA has confirmed its compliance with the applicability of ACM0002, version 13.0.0 in section D.2 of the F-CDM-CPA-DD. This amendment will ensure that subsequent CPAs meet the methodology applicability conditions. CL 7 is closed.
CL 8. Description of the PoA boundary is not sufficient and justification of PE exclusion is not consistent with the proposed PoA		Section B.3 of the PoA has been corrected to include justification of the GHGs excluded and an explanation on the project boundary together with two diagrams, one per each type of CPA.	ERM CVS reviewed the revised PoA-DD and confirms that the justification of project emission exclusion in the generic project activity has been clarified and is now consistent with the description and eligibility criteria of the proposed PoA. CL 8 is closed.
CL 9. Roles and responsibilities of the CME and CPA implementer in monitoring and record keeping are not sufficiently clear and not consistent	9.1.2	Roles and responsibilities of the CME and CPA implementing entity have been corrected in section B.7.2 under Operation and Management Structure.	ERM CVS reviewed the revised PoA-DD and confirmed that the Role and Responsibilities of the CME and CPA implementing entity with respect to record keeping and monitoring are sufficiently clarified and have been checked against the CME management manual. Under section B.7.2, the description of the operational and management has clarified the handling of records by the monitoring officer (CPA) and the programme officer (PoA), including how and when the data is to be

Clarification Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
			transferred. CL 9 is closed.
CL 10. Section B.7.1 of the generic CPA part does not include reference to minimum accuracy and applicable standards	10.1.2	It has been added that the metering for electricity generation will be conducted with calibrated measurement equipment according to relevant industry standards and the Code of practice of electricity metering NRS 057:2009. Accuracy of metering equipment will be in accordance of table 1 of NRS 057:2009. The final accuracy and calibration frequency has been added as a table as it differs for different sizes of projects.	ERM CVS reviewed the revised PoA-DD and confirms that the Generic CPA section now includes reference to meter accuracy levels and applicable standards. Accuracy requirements, and calibration frequency, will be required to be in compliance with the Code of practice electricity metering NRS 057:2009. The standard is relevant applicable national standard. CL 10 is closed.
CL 11. Please clarify if CPAs might have on-site consumption of fossil fuels due to project activity		CPAs will not have on-site consumption of fossil fuels.	The PoA-DD is clear that the POA will not involve CPAs that include both renewable and non-renewable components. For all CPA types, there is no fossil fuel consumption in the project activity. Back-up generators can be neglected according to the applied methodology. . CL 11 is closed.
CL 12. Please clarify and describe transparently how values of $EG_{m,y}$ were derived for 3 years considering that monitoring reports are not available for all 3 years.		Calculations on $EG_{m,y}$ for CDM projects have been estimated based on the existing monitoring reports on the CDM website. As noted by the DOE, the monitoring reports are not available for three years. However, it is considered to be more conservative to include an estimate for the electricity generation for the CDM projects for the calculation of the BM than to assume that there was no electricity generation by the CDM projects for the years during which no data was available. Based on the number of months and the electricity generation reported in the monitoring report, the project proponent has first calculated the electricity generation per month and has then estimated the annual electricity generation. This explanation	ERM CVS reviewed the revised PoA-DD, and the PP's response. The DOE can confirm that as some of the relevant CDM projects do not have completed 3 years of monitored data, it is acceptable to estimate the data based on information in monitoring reports as this is more conservative than assuming no electricity generation. The explanation was appropriately included in the PoA-DD. CL 12 was closed

Clarification Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
		has been added in the PoA-DD version 03.	

In addition some editorial and minor changes to the PoA-DD were made by the PP that had no relevance on compliance with CDM requirements.

Forward Action Requests	Ref. to Section Number	Summary of PP's response	Final conclusion
No FARs were raised by the DOE.	-	-	-