

VALIDATION REPORT

Title of CPA:

NuPlanet Small Scale Hydropower PoA - CPA1Stortemelk

Title of PoA to which CPA is to be included:


“NuPlanet Small Scale Hydropower PoA”

Report No.CCL0038/HPSAPP/19082011

Revision No.02

VALIDATION REPORT

CDM VALIDATION REPORT NO CCL0038/HPSAPP/19082011

CPA Title: NuPlanet Small Scale Hydropower PoA - CPA1Stortemelk		Country: Republic of South Africa		Estimated CERs (tCO₂e): 24353 annual average (CPA- 01)	
Managing Entity: NuPlanet Project Development (Pty) Ltd NuPlanet House 53 De Havilland Crescent Persequor Park, Pretoria, Republic of South Africa			CPA Implementer: Stortemelk Hydro (Pty) Ltd PO Box - 35360 Menlo Park 0102, NuPlanet House Persequor Park, Pretoria, Gauteng. Republic of South Africa		
GHG reducing measure/technology of the CPAs of the PoA:		The emission reduction would happen by displacement of electricity from the national grid of RSA due to electricity supplied by the CPA, which involves installation of a 4.4 MW hydro power project in the absence of CPAs of the PoA would have been supplied by electricity from the grid {measure for the CPAs utilising AMS I.D.}			
Report No.: CCL0038/HPSAPP/19082011		Revision: 02		Date of this report: 19/20/2012	
Technical Reviewer: Vikash Kumar Singh				Date of approval: 20/12/2012	
Approved by (Final Report): Priyesh Ramlall 				Date of approval: 20/12/2012	
GPS coordinates of the f CPA:			The verified range of geographic coordinates of first CPA is/17/: Latitude:-28.4306"S Longitude: 28.38476"E		
Organisational Unit: Carbon Check (Pty) Ltd					
Report Distribution: <input type="checkbox"/> Unrestricted Distribution <input type="checkbox"/> Limited Distribution <input checked="" type="checkbox"/> No Distribution (without permission from the Client or responsible organisational unit)					
Methodology					
Number: AMS-I.D.	Version: Version 17	Title: Grid connected renewable electricity generation	Scale: Small Scale	SS(s): 1 TA: 1.2	
Carbon Check Pty Ltd., (CCL) is commissioned by NuPlanet Project Development (Pty) Ltd. (the CME) to perform the validation of the Program of activities "NuPlanet Small Scale Hydropower PoA" in, South Africa", with regard to the relevant requirements for CDM activities.					
Summary of the CPA Validation and inclusion Opinion:					
<input checked="" type="checkbox"/> The review of the CPA design documentation and the subsequent follow-up interviews have provided CCL with sufficient evidence for the determination of the CPA's fulfilment of all stated criteria in the PoA. In our opinion, the CPA meets all relevant UNFCCC requirements for the CDM. Therefore, CCL recommends the CPA for inclusion under the PoA to the CDM Executive Board (CDM-EB).					
<input type="checkbox"/> The review of the CPA design documentation and the subsequent follow-up interviews has not provided CCL with sufficient evidence for the determination of the CPA's fulfilment of all stated criteria in the PoA. Therefore, CCL will not recommend the CPA for inclusion under the PoA and will inform the PoA managing entity, CPA implementer(s) and the CDM Executive Board of this decision.					

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VALIDATION TEAM		ROLE					
Full Name	Appointed for Sectoral scopes (Technical Areas)	Team Leader	Local Expert	Team Member (Auditor)	Trainee Auditor	Technical Expert	Technical Reviewer
Mr. Pankaj Kumar	1.1, 1.2, 3.1, 4.5, 13.1	X				X	
Mr. Ravi Shankar	1.2, 2.1, 2.2, 3.1, 13.1		X	X			
Mr. Barun Kumar	-				X		
Mr. Vikash Kumar Singh	1.2, 3.1, 13.1						X

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

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Executive Summary - Validation Opinion

Under the validation (by means of document review and on-site interviews with stakeholders), the validation team considers that the CPA description in CPA titled- “NuPlanet Small Scale Hydropower PoA - CPA1Stortemelk” as described in the CDM-SSC-CPA-DD of Date 17/12/2012, version 02 is accurate and complete; meets the requirements to be included in the PoA titled “NuPlanet Small Scale Hydropower PoA”, version02 (date 17/12/2012) and correctly applies the baseline and monitoring methodology AMS-I.D. (version 17).

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

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

The validation was executed in the following steps so far:

- Receipt of PoA-DD, CPA-DD (generic) and CPA-DD (real case) version 1.0, dated 24/03/2012 for global stakeholder comments.
- Global stakeholder comment process (04/04/2012- 03/05/2012)
- On-site visit with stakeholder interviews (10/05/2012 & 11/05/2012)
- Issue of checklist with corrective action requests (CARs) and clarification requests (CLs) and the draft validation report and protocol
- Desk review of revised DDs applying AMS-I.D. (version 17)
- Review of responses for CARs/CLs
- Issue of the final validation report and protocol

During the course of validation a total of 07 Corrective Action Requests (CARs) and 15 Clarification Requests (CLs) were identified on webhosted PoA-DD /01/ and gCPA-DD/02/. Upon evaluation of responses provided by the Project Participants, all the identified issues were closed successfully.

The single purpose of this report is its use during the inclusion process (of the real case CPA) at the time of requesting registration. The review of the CPA-DD /02/, subsequent follow-up interviews, and further verification of references have provided Carbon Check (Pty) Ltd., with sufficient evidence to determine the fulfilment of stated criteria in the PoA-DD /05/ and g-CPA-DD /06/. In the opinion of Carbon Check (Pty) Ltd., the CPA meets all relevant UNFCCC requirements for the CDM if the underlying assumptions do not change. Carbon Check (Pty) Limited recommends the real case CPA and the PoA for registration.

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Abbreviations

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

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Appendix A: Validation Protocol

Appendix B: Certificate of Competence

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1 INTRODUCTION

NuPlanet Project Development (Pty) Ltd (hereafter referred as “CME”) has commissioned the DOE Carbon Check (Pty) Ltd., to assess the information in the CDM-SSC-CPA-DD for the CPA title “NuPlanet Small Scale Hydropower PoA - CPA1Stortemelk” (hereafter called “the CPA”) against the requirements for including CPAs to the PoA “NuPlanet Small Scale Hydropower PoA” and further documentation requirements for including CPAs to a PoA.

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

1.1 Objective

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

1.2 Scope

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

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

2 METHODOLOGY

The validation consists of the following four phases:

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

The following sections outline each step in more detail.

2.1 Document Review

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

REFERENCE NO.	DOCUMENTS
/01/	CPA-DD specific (webhosted version), “NuPlanet Small Scale Hydropower PoA - CPA1Stortemelk”, version 1.0, Date – 24/03/2012
/02/	CPA-DD specific (final version), “NuPlanet Small Scale Hydropower PoA - CPA1Stortemelk”, Version 02, Date – 17/12/2012
/03/	Emission reduction spread sheet corresponding to /01/
/04/	Emission reduction spread sheet corresponding to /02/
/05/	PoA-DD for “NuPlanet Small Scale Hydropower PoA ”, Version 02, Date – 17/12/2012

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/06/	Final CPA-DD template
/07/	<ul style="list-style-type: none"> • Financial sheet corresponding to /01/ • Financial sheet corresponding to /02/
/08/	Letter of Approval from the DNA of Republic of South Africa (dated 19/09/2012), authorizing NuPlanet project Development (Pty) Ltd as the project proponent and the coordinating and managing entity (CME) to participate in the CDM project.
/09/	Technical Feasibility Study prepared by Aurecon dated February 2011.
/10/	The Management System for the NuPlanet Version 1.1, dated 03/10/2012.
/11/	Declaration from the CME: dated 15/08/2012 PoA is a voluntary action by CME and is not mandated by any law or regulations of republic of South Africa.
/12/	Declaration for no ODA involved/ diverted as a result of the PoA dated 15/02/2012
/13/	EIA Report dated March, 2009 by Ninham Shand (Pty) Ltd.
/14/	Environmental authorization dated 09/12/2009
/15/	Signed agreement between technology supplier (Andritz GmbH) and Stortemelk Hydro (Pty) Ltd., dated 08/08/2012
/16/	Agreement between CPA & CME dated 21/11/2012
/17/	Proof for GPS coordinates of the CPA site. <ul style="list-style-type: none"> • EIA Report • Technical Feasibility report • Google earth screen shots
/18/	Certification of Incorporation of Stortemelk Hydro (Pty) Ltd. (Registration No.: 2009/018298/07, dated 10/06/2011
/19/	Department of Environmental Affairs; National Environmental Management Act, 1998 (Act No. 107 OF 1998):
/20/	Grid Emission Factor (GEF) calculation Sheet
/21/	The Electricity Regulation Act, 2006 (Act No. 4 of 2006) (http://www.energy.gov.za/files/policies/NationalEnergyRegulatorAmendmentBill.pdf)
/22/	Integrated resource plan for electricity 2010-2030 (http://www.energy.gov.za/IRP/2010/IRP_2010.pdf)
/23/	Generation forecast Independent Review dated 06/09/2012 by Aurecon
/24/	Draft PPA between seller (Stortemelk Hydro) and ESKOM Holdings SOC Limited
/25/	Implementation Plan of the CPA dated 20/11/2012
/26/	Documents referred for Investment Analysis: <ol style="list-style-type: none"> a) Implementation Plan dated 03/08/2012 b) Technical Feasibility Study prepared by Aurecon date February 2011 c) Stortemelk HEPP, South Africa, "Electro-Mechanical delivery" prepared by HYDROENERGI dated December 2011. d) Cost Estimated Letter from "ESKOM" for the Construction of works dated 01/02/2012 e) Proposal for Professional Engineering services for the Stortemelk Hydropower project dated 20/10/2011 f) E-mail from Mr. Jonathan Mackay for Budget Quote for Power Transformer dated 09/05/2012. g) Maintenance and Operation proposal from revolution energy dated 08/11/2011 h) Developers Fee For Stortemelk hydro project dated December 2010 i) Quote from Earthworld architects (Pty) ltd. dated 01/02/2011. j) Stortemelk Hydro Insurance Report dated November 2011. k) Proposal for Management Contract dated December 2010.

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	<p>l) Consumer Price Index release by Statistics South Africa dated December 2011</p> <p>m) RMB Financial Markets Research Monthly ZAR outlook dated 10/02/2009</p> <p>n) RMB FICC Research picture the Rand dated 19/01/2011</p> <p>o) Capital Allowances on the Bethlehem Hydro dated 01/09/2010</p> <p>p) Taxation in South Africa- 2010-2011 published by South African Revenue Service.</p> <p>q) Integrated Report 2011 published by Eskom</p> <p>r) Eskom's Tariffs for the Period 01/04/2012 to 31/03/2013 published by NERSA dated 09/03/2012</p> <p>s) A letter from Mertech to Dept. of Energy regarding Corporate Financiers dated 29/02/2012</p> <p>t) A letter from "Aurecon" Third party confirm for IPP Procurement Programme dated 06/09/2012.</p> <p>u) Reference for salary for similar type of project of PP (Account payable transaction)</p> <p>v) Renewable Energy Feed-in tariff guidelines (March 2009), page 12, Table A 1.1</p> <p>w) A declaration from CPA implementer that the proposed project activity will be 100% equity funded.</p>
/27/	Operational life time certificate dated 07/09/2012 provided by Technology supplier
/28/	Undertaking from CME, confirming that CPA1 is not part of any other registered PoA.
/29/	Supporting documents for Local stakeholders consultation
/30/	Declaration from CME, confirming approach for additionality demonstration

Referred documents/websites:

/B01/	CDM VALIDATION AND VERIFICATION MANUAL VERSION 01.2. EB 55 (ANNEX 1)
/B02/	AMS-I.D. Grid connected renewable electricity generation (version 17)
/B03/	Tool to calculate the emission factor for an electricity system, version 02.2.1, EB 63 (Annex 19)
/B04/	<p>PoA Specific guidelines / standards published by UNFCCC:</p> <ol style="list-style-type: none"> 1. CDM programme of activities design document form (CDM-PoA-DD) Version 01, EB 33 2. CDM programme activity design document form (CDM-CPA-DD) Version 01, EB 33 3. Procedures for registration of a programme of activities as a single CDM project activity and issuance of certified emission Reductions for a programme of activities, Version 04.1, EB 55 (Annex 38) 4. Procedures for review of erroneous inclusion of a CPA, version 03, EB 61 (Annex 22) 5. Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities, version 01, EB 65 (Annex 03) 6. Clarifications regarding the "Procedures for registration of a programme of activities as a single CDM project activity and issuance of certified emission reductions for a programme of activities", version 01, EB 60 (Annex 26) 7. Guidelines on assessment of de-bundling for SSC project activities, Version 03, EB 54 (Annex 13) 8. Guidelines on the demonstration of additionality of small-scale project activities, version 09.0, EB 68 (Annex 27) 9. Guidelines for completing the Component Project Design Document form for Small Scale Component Project Activates, version 01, EB 66 Annex-17 10. Procedures for registration of A Programme of Activities as a Single CDM Project Activity and Issuance of Certificated Emission Reduction For a Programme of Activities , version 04.1, EB 55 Annex 38 11. Guidelines on Investment Analysis, EB 62, Annex. 5

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/B05/	General Guidelines for SSC CDM methodologies, version 19.0, EB 69 (Annex 27)
/B06/	Glossary of CDM terms, version 07, EB 70
/B08/	Websites: <ol style="list-style-type: none"> 1. www.unfccc.int 2. http://www.cdmpipeline.org/ 3. http://maps.google.com 4. http://www.google.com/earth/index.html
/B08/	Website used for the validation of Grid Emission Factor: <ol style="list-style-type: none"> 1. http://www.eskom.co.za/live/click.php?u=%2Fcontent%2FCEF_CalculatorFINAL2010-2011%7E2.xls&o=Item%2B236&v=62a438 2. http://financialresults.co.za/2011/eskom_ar2011/profile_key_facts02.php 3. http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf (table 1.2 and 1.4 (other kerosene and other bituminous)) 4. http://www.eskom.co.za/live/click.php?u=%2Fcontent%2FFuelConsumptionElctricityGen.xls&o=Item%2B236&v=977d99 5. http://financialresults.co.za/2010/eskom_ar2010/downloads/eskom_ar2010.pdf http://financialresults.co.za/2011/eskom_ar2011/downloads/eskom-ar2011.pdf (page 324)

The changes between the CPA-DD version 1.0 (real case), published for the 30 days stakeholder commenting period /01/ and the final version submitted for registration /02/ are addressed in the table 2 of the validation protocol as a part of this report.

The main changes between the CPA-DD, version 1.0 /01/ published for the 30 days stakeholder commenting period and the final version /02/ submitted for registration are presented in the below table as follows:

TOPIC	CPA-DD - GSC/01/	FINAL CPA-DD/02/	ASSESSMENT
PoA title	"NuPlanet Small Scale Hydropower PoA"	"NuPlanet Small Scale Hydropower PoA"	No Change
CPA title	NuPlanet Small Scale Hydropower PoA - CPA1 Stortemelk	NuPlanet Small Scale Hydropower PoA - CPA1 Stortemelk	No Change
CPA Implementer	NuPlanet Project Development (Pty) Ltd	Stortemelk Hydro (Pty) Ltd	Name of CPA implementer corrected in CPA-DD. Please refer CAR 4 and its closure
Scope	1: Energy Industries (renewable / non-renewable sources)	1: Energy Industries (renewable / non-renewable sources)	No change
Methodology / Activity	AMS-I.D. (version 17) / Small-scale	AMS-I.D. (version 17) / Small-scale	No change
Amount of emission reductions (tCO ₂)	172,662	243,533	Emission reduction value increased from web hosted CPA-DD. In the web hosted document the figure used was 17801 MWh per annum for the 10 year period. However the figures that were used in the final version of the emission reduction calculation spreadsheet were significantly higher i.e. 27 265 MWh per

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			<p>annum for the first eight years and 30780 MWh per annum for years 9 and 10 (the source of these figures was the feasibility study). As a result of the significant increase in the generation figures used, this led to an increase in the emission reduction values (this despite that the fact the GEF went from 1.021 in the web hosted document to 0.90 in the latest version of the CPA-DD).</p> <p>Please refer CL 15 and its closure in Appendix A, Table 2.</p>
Real case CPA starting Date	September 2012	01/05/2013	As starting date of CPA is not fixed yet, anticipated start date mentioned in CPA-DD based in implementation schedule/25/.
CPA Location	North of the Town of Clarens in the Free State Province	North of the Town of Clarens in the Free State Province	No Change

2.2 Follow-up actions

In order to reach to a Validation Opinion a site visit along with an interview was planned for 10/05/2012 – 11/05/2012. Prior to the interview salient points to be discussed were planned. Date of interview, interviewee and points discussed are given in the following table.

SR. NO.	DATE	NAME AND ROLE	ORGANIZATION	TOPIC
/a/	10/05/2012	S.van der Wat Project Manager	NuPlanet Project Development (Pty) Ltd	<ul style="list-style-type: none"> • CME coordinating CDM functions and responsibilities. • Discussion on record keeping, monitoring plan and manual. • Discussion on double counting • Discussion on financing pattern (means of finance) of the CPAs(including real case) and involvement of public funding
/b/	10/05/2012 11/05/2012	Anton-Louis Olivier Managing Director	NuPlanet Project Development (Pty) Ltd	<ul style="list-style-type: none"> • CME coordinating CDM functions and responsibilities. • Decision to undertake the project as CDM project.

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				<ul style="list-style-type: none"> • Discussion on stated goal and policy of the PoA. • Discussion on the operational and management arrangements of the PoA. • Discussion on LSC and statutory clearances required for the implementation of the CPA.
/c/	10/05/2012	Rob Short Carbon Advisor	Promethium Carbon (Pty) Ltd	<ul style="list-style-type: none"> • Discussion on eligibility criteria and inclusion of a typical CPAs in the PoA including the real case CPA. • Discussion on Additionality justification on PoA level and on typical CPA level including the real case CPA.
/d/	10/05/2012	HJ Swanepoel Financial Manager	Promethium Carbon (Pty) Ltd	<ul style="list-style-type: none"> • Investment analysis of the CPA

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

2.3 Resolution of outstanding issues

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

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

The completed validation protocol for the CPA "NuPlanet Small Scale Hydropower PoA - CPA1Stortemelk" is enclosed in Appendix A to this report.

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

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

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

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

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Figure1 Validation protocol tables

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

Validation Protocol, Table 2 - Resolution of Corrective Action Requests and Clarification			
Corrective action requests and/or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
The CAR and/or CLs raised in table 1 are repeated here.	Reference to the checklist question number in Table 1 where the CAR or CL is explained.	The responses given by the project participants to address the CARs and/or CLs.	The validation team's assessment and final conclusion of the CARs and/or CLs.

Validation Protocol, Table 3 - Forward Action Requests			
Forward action request	Reference to Table 2	Response by project participants	Validation Conclusion
The FAR raised in table 1 is repeated here.	Reference to the checklist question number in Table 1 where the FAR is explained.	Response by the project participants on how forward action request will be addressed prior to first verification.	

2.4 Internal quality control

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

2.5 Validation team and the technical reviewer(s)

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

VALIDATION TEAM		TYPE OF INVOLVEMENT								
Full Name	Appointed for Sectoral scopes (Technical Areas)	Supervision of work	Desk review	Interview	Site visit &	writing protocol	Report & Expert Input	Technical support	Reporting	Technical Reviewer

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Mr. Pankaj Kumar	1.1, 1.2, 3.1, 4.5, 13.1	X	X	X	X	X		
Mr. Ravi Shankar	1.2, 2.1, 2.2, 3.1, 13.1			X		X		
Mr. Barun Kumar	-		X	X			X	
Mr. Vikash Kumar Singh	1.2, 3.1, 13.1							X

3 VALIDATION SUMMARY

Under the validation by means of document review and on-site interviews with stakeholders, the validation team considers that the CPA description in CPA titled “NuPlanet Small Scale Hydropower PoA - CPA1Stortemelk”, as described in the CDM-CPA-DD of Date 17/12/2012, version 02 is accurate and complete; meets the requirements to be included in the PoA titled “NuPlanet Small Scale Hydropower PoA” and correctly applies the baseline and monitoring methodology AMS-I.D. (version 17). Several clarifications and corrective actions have been raised in during the course of validation and successfully closed (please refer to table-2 of appendix A for details of closure).

3.1 CPA Design Document

The CPA-DD is in compliance with relevant form and guidance as provided by the CPA-DD template/06/ for the POA and UNFCCC requirements under the PoA.

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

3.2 CPA Description

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

The proposed CPA is developed under the small-scale PoA, “NuPlanet Small Scale Hydropower PoA” with objective to introduce and encourage hydroelectric system in Republic of South Africa. Stortemelk Hydro (Pty) Ltd is responsible for the implementation of the CPA and NuPlanet Project Development (Pty) Ltd. is the CME of the PoA. The CPA will reduce GHG emission by replacing fossil fuel fired electricity generation in the national grid of RSA.

The CPA involves the following:

- Installation of a hydro-electric turbine of total installed capacity 4.4 MW and total installed capacity of the group will not exceed 15 MW, a threshold limit for small scale project in a pre-determined province of RSA.
- Installation of hydroelectric systems at the site where there was no hydro electrical system in operation prior to the implementation of the activity (Greenfield).

Review of CPA DD /02/ and interview with the CME and CPA implementer reveals that the CPA will be implemented with a capacity of 4.4 MW. The same was verified by reviewing the Implementation Plan of the CPA /25/ as provided by CME and CPA implementer.

As described in CPA-DD/02/, the CPA involves installation of hydroelectric vertical Kaplan type turbine with a total installed capacity of 4.4 MW and the hydroelectric vertical Kaplan type turbine to be installed /09/. Proposed CPA will be implemented in an existing reservoir with no change in the volume of reservoir which was confirmed by reviewing Technical feasibility report /09/ and EIA report/13/. The verified technical details of the project activity as confirmed based on observation during on site visit interviews and document review /02/,/09/,/13/ and summarised below:

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Parameters	Verified information /02/09/13/
Elevation of water at intake (Full Supply Level)	1731.5
Elevation of water at tailrace (Tail water level)	1717.5
Gross Head	14.0
Estimated Losses through system at rated conditions (excluding through turbine)	0.95
Net Head	13.0
Scheme Operation	The scheme is to be automatically operated (unmanned with remote start-up capability) and shall be operated by level control. The upstream water level shall be kept constant to the FSL to prevent spillage whilst maximizing the head. SCADA system to be provided for remote operation.
Rated Flow	42 m ³ /s
Design Flow (maximum efficiency)	35 m ³ /s
Turbine Type	Double regulated Kaplan
Generator output (at rated condition)	4.4 MW
Generator output (at design condition - 35m ³ /s)	3.9 MW
Step Up Transformer	22 KV
Generator	0.85 / 0.9 power factor
System Frequency	50 Hz
Generator Type	Synchronous (to be interconnected to the national Eskom Grid)
Generator Cooling	Air / Water cooled (Supplier to specify)
Number of units	1
Length of penstock	40 m
Diameter of penstock	3.4 m

A plant load factor has been calculated 76.70%. % (as average PLF for 20years) based on the expected electricity generation from the plant calculated/09/ and considers downtime of 10 days per year. This is based on FSR /09/ and hence confirms to the requirement of §3(b) of EB48 Annex 11/B11/, checked and confirmed by the validation team.

The CPA will be installed in the Free State province in Republic of South Africa. The details of geographical location /02/ of CPA are as follows:

NO.	CPA IMPLEMENTER	ADDRESS	GEOGRAPHIC REFERENCE	
			Latitude:	Longitude: -
1	Stortemelk Hydro (Pty) Ltd	NuPlanet House, Persequor Techopark, Pretoria, Gauteng, Republic of South Africa.	-28.4306	28.38476

The ownership of the CPA was established through review of CPA-CME Agreement dated 21/11/2012/16/ as well as the review of signed contract between Stortemelk Hydro (Pty) Ltd. and Andritz Hydro GmbH dated 08/08/2012 /15/and was further substantiated by a implementation plan

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dated 20/11/2012 provided by Stortemelk Hydro (Pty) Ltd., (CPA implementer) /25/ and has been verified during the site visit.

The project is still in implementation stage. The expected date of commissioning is in January 2014, as verified from the implementation schedule /25/. The lifetime of the equipment is 20 years and the same has been verified from the letter from technology supplier /27/ confirming operational life time of the project.

The CPA is expected to result in an average annual emission reduction of 24353 tCO₂e /04/ for crediting period of 10 years /02/. The start date of crediting period of the CPA as per the CPA-DD /02/ is 01/05/2014 or the effective date of registration whichever is later. Moreover, the expected starting date of crediting period for the CPA is in-line with the provisions provided under CPA-DD template.

The duration of crediting period shall not exceed the end date of the PoA (the expected starting date of crediting period fulfils the procedure for registration of PoA EB55, Annex 38 /B04-10/ para. 7(c)).

The CPA is funded by equity of the CPA implementer. The CPA receives no public funding /12/. The expected starting date of the CPA is 01/05/2013 based on the implementation schedule /25/ and is after start of validation of the PoA i.e. 04/04/2012 (date of GSC of PoA), hence applicable to include in PoA.

The validation team has assessed from UNFCCC website /B08-1/ and on-site interviews that there is no other similar PoA or CDM project occurring in the CPA area and the CPA is neither registered as an individual CDM project activity or is part of another Registered PoA. The same has been confirmed by a letter from NuPlanet Project Development (Pty) Ltd. (CDM developer) of the PoA/28/.

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

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

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

3.3 CPA Boundary

The CPA boundary has assessed based on documented evidence, the on-site visit and interviews. Validation team confirms that the identified boundary, the selected sources, and gases as documented in the CPA-DD are justified; hence all sources and GHGs required by the applied methodology/B02/have been included within the project boundary. The spatial extent of the CPA boundary is Free State Province in Republic of South Africa, which is the physical and geographical location of hydroelectric system installed by the, Stortemelk Hydro (Pty) Ltd which is the CPA implementer. Validation team confirms that the identified boundary, the selected gases and sources are documented in the CPA-DD /02/ and fully in line with the requirements set by the PoA-DD/05/.

3.4 Eligibility Criteria for CPA Inclusion

Review of PoA-DD /05/, CPA-DD template /06/ and on-site interview with representatives of CME reveals that the CME of the PoA employs clear and unambiguous criteria for the inclusion of the CPAs. The eligibility criteria have been stated and validation team confirms the eligibility criteria are in line with requirement of § 14, annex 3 of EB 65 /B04-5/. Additionality and applicability of the applied methodology are the eligibility criteria as per the PoA-DD/05/, which is deemed appropriate and acceptable to the validation team. The eligibility criteria can be checked at the CPA level by the CME and shall be confirmed by the DOE before inclusion of the CPAs in the PoA.

The validation team validates the eligibility criteria in accordance with the VVM (version 01.2) para. 167; the procedure for registration of a PoA (version 04.1) para. 6 (g); and Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for

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programme of activities (version 01.0) para. 13-16, PP shall definite (DOE shall assess) the eligibility criteria for inclusion of a project activity as a CPA under the PoA, which shall include, as appropriate, criteria for demonstration of additionality of the CPA, applicability of applied methodology (ies), and the type and/ or extent of information that shall be provided by each CPA in order to ensure its eligibility. The validation team summarized the validation of the eligibility criteria as follows

SL. NO.	ELIGIBILITY CRITERIA AS STATED IN SECTION B.2 OF THE CPA-DD /02/ AND SECTION A.4.2.2 OF THE REGISTERED POA-DD /05/	STATUS MARKED IN CPA-DD /02/	ASSESSMENT BY THE VALIDATION TEAM
1.	Any CPA must be located within the internationally recognized geographical boundaries of the RSA.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>Through the validation of geographical coordinates provided in the CPA it was confirmed that CPA lies within the geographic boundary of RSA. Project location was verified during the site visit. Moreover additional document review such as Technical Feasibility report /09/ and EIA report 13/ of CPA implementer and also confirmed with Google earth/17/</p> <p>Conclusion: Based on above, validation team could confirm that boundary of the implemented CPA is within the geographical territory of the PoA i.e. Republic of South Africa and hence found in line with the requirement of PoA-DD.</p>
2.	Each CPA must be linked to specific geographical co-ordinates supported by a description of its location to avoid double counting of emission reductions	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>UNFCCC website was checked to confirm that the CPA is not registered or seeking registration as a standalone project or seeking inclusion or already being included under any other PoA. Additionally Agreement to subscribe for CPA1 between NuPlanet Project Development (Pty) Ltd. And Stortemelk Hydro (Pty) Ltd. dated 21/11/2012/16/ submitted by CME and assessed to be appropriate with regards to avoid double counting.</p> <p>Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.</p>
3.	Each CPA will use hydroelectricity renewable energy generation technology only. The technology will satisfy all relevant national testing and certification requirements. This will be shown through a review of the feasibility study related reports that describe the technology to be used	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>Technical feasibility report /09/ have been assessed by validation team and found that the specifications of technology/measures are correctly written and as per the interview of PP during the site visit, in the revised CPA-DD/02/.</p> <p>Conclusion: Based on the above assessment, validation team concludes that this</p>

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			eligibility criteria of the PoA is complied by the subject CPA.
4.	Each CPA should show that the earliest date of its first real action or implementation or construction was after the date on which the CDM-PoA-DD was published for Global Stakeholder Consultation	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>Start date of CPA has not been fixed yet as project is yet to achieve financial closure. Expected start date is 01/05/2013 on which first work order for equipment is expected to be placed based on implementation schedule/25/and it is after the commencement of validation of the PoA i.e. 04/04/2012 (Date of GSC)</p> <p>Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.</p>
5.	The CPA must have a capacity of less than 15 MW	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>Technical feasibility report /09/ have been assessed by validation team and found that the capacity of the project is correctly written and confirmed with interview of PP during the site visit that capacity of the CPA-DD is 4.4 MW and will remain under the threshold limit of 15 MW.</p> <p>Conclusion :</p> <p>Validation team based on review of PoA-DD/05/ (section A.4.2.2), CPA-DD /02/ along with above-mentioned documents confirms that the subject CPA complies with the requirement of small scale project activities.</p>
6.	The CPA must involve either the (a) installation of either a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield Plant) or (b) involve a capacity addition or (c) involve a retrofit of an existing plant or (d) a replacement.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>Technical feasibility report /09/ have been assessed by validation team and found that the proposed project is new greenfield hydroelectric project and also confirmed by site visit and found there is no renewable energy power Plant operating at project site, further cross checked by Environmental authorization /14/ and EIA report /13/.</p> <p>Conclusion :</p> <p>Validation team based on review of CPA-DD /02/ along with above-mentioned documents confirms that the subject CPA complies with the requirement of applied methodology AMS-I.D., Ver.17./B02/</p>
7.	CPAs with reservoirs must satisfy at least one of the following conditions: <ul style="list-style-type: none"> • The CPA is implemented in an existing reservoir with no change in the volume of reservoir. • The CPA is implemented in an existing reservoir, where the volume of reservoir is increased 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>Proposed CPA will be implemented in an existing reservoir with no change in the volume of reservoir which was confirmed by reviewing Technical feasibility report /09/ and EIA report/13/.</p> <p>Conclusion :</p>

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	<p>and the power density of the project activity, as per definitions given in the project emissions section, is greater than 4 W/m².</p> <ul style="list-style-type: none"> The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m². 		<p>Validation team based on review of CPA-DD /02/ along with above-mentioned documents confirms that the subject CPA complies with the requirement of applied methodology AMS-I.D., Ver.17.</p>
8.	<p>CPAs will demonstrate additionality using the Guidelines on the Demonstration of Additionality of Small-Scale Projects (formerly known as Attachment A of Appendix B of the “Simplified modalities and procedures for small-scale CDM project activities”) as detailed in Section E.5.1 of the PoA-DD. The conditions that ensure that CPAs meet the requirements pertaining to the demonstration of additionality as specified in Section A of EB 65 Annex 3</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>Technical feasibility report/09/ and other supporting documents beside confirmation by CME on chosen additionality demonstration approach/30/ and IRR work sheet/07/ have been provided to DOE for validation. DOE has assessed the provided documentation and confirms that corresponding documents appropriate for the (Investment analysis) to demonstrate additionality. Please refer to section 3.8.2 of this report under assessment of Investment analysis.</p> <p>Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.</p>
9.	<p>CPA will have undertaken stakeholder consultation, which will have been formally recorded</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>Stakeholder consultation was carried out in Sept.-Oct. 2011 prior to the PoA-DD GSP with relevant stakeholder consultation records /29/.</p> <p>Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.</p>
10.	<p>CPAs will have undertaken analysis of environmental impacts, which will have been formally recorded</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>EIA was conducted and completed in environmental impact assessment (EIA)/13/ and Environmental authorization/14/ issued to project on 09/12/2009.</p> <p>Conclusion: All of information summarized in the real-case CPA-DD Section C and Section D came from these supporting evidences. Details are discussed in the Section 3.8 of this report. Thus, conditions to this eligibility criterion are met.</p>
11.	<p>No official Development Aid shall be involved or diverted as a result of activities under the CPA.</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>As per section A.4.5 of the revised CPA-DD/02/, interview with the CPA implementer and CME, and documents in the form of declaration/12/ that project is not receiving or seeking public funding were checked and found acceptable to</p>

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			<p>the validation team.</p> <p>Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.</p>
12.	<p>CPAs will show clearly that the target group is grid-connected. This will be shown clearly through a review of the feasibility related documentation, clearly indicating that hydroelectricity will be delivered into the grid's electricity transmission system. As CPAs will be feeding into the grid via the transmission system, an eligibility criterion related to distribution mechanisms is not required.</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>The project will be exporting electricity to South African grid via the transmission system</p> <p>The compliance with eligibility criteria was substantiated through:</p> <ul style="list-style-type: none"> Draft PPA dated 02/02/2012 /24/ which will be signed between CPA implementer and Eskom Holdings SOC Limited <p>Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.</p>
13.	<p>Where applicable, the conditions that ensure that every CPA in aggregate meets the small-scale or microscale threshold criteria and remains within those thresholds throughout the crediting period of the CPA</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>This eligibility criterion is checked during the course of validation (desk review of the documents e.g. CPA-DD/02/ and Emission reduction calculation spread sheet/04/ and site visit, technical feasibility report/09/) that CPA is fulfilling the conditions of a small scale category as it is less than 15 MW (CPA is 4.4 MW of installed capacity of hydro power project/09/).</p> <p>Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.</p>
14.	<p>Where applicable, the requirements for the debundling check, in case CPAs belong to small-scale (SSC) or microscale project categories.</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> NO	<p>This is checked based on review of declaration in the form of Agreement to subscribe for CPA1 (Stortemelk) between Stortemelk Hydro (pty) Ltd. and NuPlanet Project Development (Pty) Ltd/16/. Validation team has further performed an independent web search to confirm the same, and based on that, it is concluded that SSC CPA is not a de-bundled component of a large scale activity and hence found to be in line with EB 54 Annex 13.</p> <p>Conclusion: Based on the above assessment, validation team concludes that this eligibility criteria of the PoA is complied by the subject CPA.</p>

According to the requirements of § 17 and § 18 of annex 3 of EB 65 /B04-5/, the validation team by means of onsite visit interview and through document review confirms that the CME is competent to check the features of the CPA. The CME system manual /10/ clearly mentions the roles, responsibilities and authorities within the managing entity. The validation team has also confirmed

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through document review and on site visit interview the procedures to avoid double counting /10/, training and capacity development for personnel, records and documentation control process, Measures for continual improvements of the PoA management /10/.

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

3.5 Additionality

The project involves installation of one vertical Kaplan hydro- electric turbine of total installed capacity of 4.4 MW /09/ for generation of 27 059 MWh/year (average) of electricity and exporting the power generated to National grid of South Africa. The project is a small -scale project and accordingly project developer has demonstrated the additionality of the project activity in conformity with PoA, using Annex 27 of EB 68 read with Annex 34 of EB 35 and Annex 5 of EB 62.

3.5.1 Prior consideration of CDM

The starting date/02/ of the project activity is stated as 01/05/2013. In support thereof, the PP submitted implementation schedule as project start date has not been fixed yet. The expected start date of the project as indicated in Implementation schedule/25/, which is expected date for placing of 1st purchase order for equipment. Since the project developer had not undertaken any construction or any real action for the implementation of the project activity prior to this date and the real action of the programme activity is expected to begin only on 01/05/2013, as per Glossary of CDM terms (Ver.07), this date has been appropriately treated as the start date of the project activity. The CPA-DD along with PoA DDs was web-hosted for Global Stakeholders' Comments (GSC) on 04/04/2012, which is prior to the start date of the project activity and after 02/08/2008. Therefore, this is a new project activity and as per paragraph 2 of Annex 13, EB 62, prior intimation to UNFCCC and DNA is not necessary in cases where the start date of the project activity is after the web-hosting for GSC. Moreover as per § 3 of Annex 26 EB 60 assessment of prior consideration of CDM do not apply to the PoAs as at present it expected that no component of the programme will commence prior to the start date of validation of the PoA (04/04/2012). Based on above, validation team, therefore, concludes that the CPA confirms to Annex 13, EB 62 and Annex 26, EB 60.

3.5.2 Alternatives

The project activity is based on approved methodologies AMS I.D. Since the methodology have prescribed the baseline, as per paragraph 105 of VVM (01.2), discussion on alternatives is not necessary.

3.5.2 Approach for demonstrating CPA additionality

The proposed project activity is a small -scale project activity. Therefore, in accordance with § 28 of the simplified modalities and procedures for small-scale CDM project activities and PoA, the Project Participant (PP) has demonstrated the additionality of the project activity using Annex 27, EB 68 read with Annex 34 of EB 35 and Annex 5 of EB 62.

Key criteria for assessing additionality at CPA level have been explained in section E.5.1 and E.5.2 of PoA-DD /05/.

3.5.3 Appropriateness of investment Analysis

PP had demonstrated that the financial returns of the proposed CPAs within the POA are insufficient to justify the required investment (conformity to Paragraph 109 (b) of VVM 1.2). For demonstrating the financial unattractiveness of the CPAs within the POA, PP has chosen investment analysis and to demonstrate the unattractiveness of the project activity, had selected benchmark analysis. Validation team has assessed correctness of the chosen approach of investment analysis and noted that since there is revenue (from sell of electricity) other than benefits from CDM related income in the project, hence option I the simple cost analysis is not applicable and correctly not considered by the PP. Furthermore, the baseline scenario (electricity from Grid) does not involve investment and accordingly investment Comparison analysis cannot be applicable. Since in this instant case baseline is outside the direct control of the project developer (grid connected power) and hence, the choice of the project developer is restricted to "invest or not to invest", the benchmark approach is most suited as per the latest version of Guidance 19 of Annex 5 of EB 62.

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3.5.4 Appropriateness of Financial Indicator

The PP has chosen after tax equity IRR as financial indicator. Equity IRR calculation is used to determine the return finally available from the project against total equity investment, hence it's a very important ratio, because it helps to investor to decide whether to go with the project or not. PP has proposed that the project will be funded through 100% equity investment. At 100% equity investment level the project IRR and Equity IRR for any project will be at par.

3.5.4 Appropriateness of Benchmark

The project developer has chosen Equity IRR to demonstrate the additionality of the project. Guidance 15 of the Guideline on the Assessment of Investment Analysis ver. 05 states that "If the benchmark is based on parameters that are standard in the market, the cost of equity should be determined either by: (a) selecting the values provided in Appendix A; or by (b) calculating the cost of equity using best financial practices, based on data sources which can be clearly validated by the DOE, while properly justifying all underlying factors". Accordingly PP has considered the default values for the expected return on equity provided under Appendix of EB 62, Annex 5./B04-11/ The CPA falls under Group 1 project and the default value for return on equity for South Africa is 10.90%, accordingly PP has considered ROE of 10.90% as benchmark of the project. As the financial indicator are calculated by the PP is in real terms, hence, can be directly compared with the financial indicator.

The validation therefore concludes that the benchmark applied is suitable for the financial indicator selected and it is reasonable to assume that the investment would not have taken place at a return lower than the benchmark. In the above background, validation team concludes that the selected benchmark is appropriate and hence acceptable to the validation team.

3.5.5 Validation of Input Parameters

The proposed project activity envisages commonly available hydroelectricity related technology that transforms the kinetic energy in water flows into electricity. Accordingly, as envisaged in the PoA, the CPA has furnished all the input parameters used in the computation of the financial indicator. All the basic assumptions supporting the IRR computation are given in the 'Assumptions' IRR template together with the sources. The input parameters used, which provides the details of each of the input parameters used, their source and the validation team's observation on the appropriateness.

PP has used standardised Excel sheet to check the additionality of 1st CPA. The parameters to calculate the IRR benchmark are in line with the EB 62 Annex 5 "Guidelines on the assessment of Investment Analysis" (Version 05) as detailed in the table below:

The table below contains input values used for the 1st CPA's benchmark analysis calculation establishing the 1st CPAs project IRR and their respective validation findings.

Parameter	Unit	Value	Data Source used in the CPA DD /02/ and IRR spread sheet /	Assessment by the validation team(check and cross check)
Plant capacity	MW	4.4	Equipment supplier tender document (Stortemelk HEPP, South Africa) - technical specification/26-c/	This has been checked from the Equipment supplier tender document (Stortemelk HEPP, South Africa) - technical specification/26-c/. The document was available before the start date of CPA, hence acceptable. The plant capacity is further cross checked with the EIA report /13/.
Life of Plant	Years	20	Lifetime certificate from ANDRITZ HYDRO GmbH/27/	PP has submitted the lifetime certificate of ANDRITZ HYDRO GmbH/27/. The supplier has mentioned that with sufficient maintenance the major components of the plant i.e. turbine and generators has life of 20 years. The plant capacity is further cross

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				checked with the technical feasibility report /09/.																
Generation	MWh/An num	27265	Stortemelk Technical Feasibility Report – Botterkloof /09/	<p>Section 4.9 of the Technical Feasibility Report /09/ provides following generation without downtime/ or maintenance of plant. At the same time reports says that the downtime /or maintenance time can be considered as 5%. The generation details are as under:</p> <table border="1"> <thead> <tr> <th>Period</th> <th>Generati on (GWhrs/ Annum)</th> <th>Generati on at 95% (GWhrs/ Annum)</th> <th>PLF</th> </tr> </thead> <tbody> <tr> <td>2013-2020</td> <td>28.7</td> <td>27.265</td> <td>70.7%</td> </tr> <tr> <td>2021-2027</td> <td>32.4</td> <td>30.780</td> <td>79.9%</td> </tr> <tr> <td>2028-2032</td> <td>33.2</td> <td>31.540</td> <td>81.8%</td> </tr> </tbody> </table> <p>The power generation at 95% is considered in the 1st CPA, which is appropriate also.</p> <p>The Technical Feasibility Report /09/ prepared by “Aurecon”, which provides engineering, management and specialist technical services for public and private sector clients globally. “Aurecon” is third party engineering company hence Generation/PLF provided by “Aurecon” confirms the compliance of para 3 (b) of Anne. 11, EB 48 “Guidelines for the reporting and validation of plant load factors” (Version 01), hence acceptable to the validation team. Validation team further cross checked the Plant load factor: by refereeing Renewable Energy Feed-In Tariff Guidelines (March 2009), page 12, Table A1.1 /26-v/which considered Plant load factor of 50%. The average PLF for the subject CPA for 20years comes to 76.70%. PLF considered by CPA is much higher than the PLF considered in REFIT, hence acceptable to the validation team.</p>	Period	Generati on (GWhrs/ Annum)	Generati on at 95% (GWhrs/ Annum)	PLF	2013-2020	28.7	27.265	70.7%	2021-2027	32.4	30.780	79.9%	2028-2032	33.2	31.540	81.8%
Period	Generati on (GWhrs/ Annum)	Generati on at 95% (GWhrs/ Annum)	PLF																	
2013-2020	28.7	27.265	70.7%																	
2021-2027	32.4	30.780	79.9%																	
2028-2032	33.2	31.540	81.8%																	
Total project cost	Please see in the assessment column	Please see in the assessment column	<ul style="list-style-type: none"> Stortemelk Technical Feasibility Report – Botterkloof /09/ Equipment supplier tender document (Stortemelk HEPP, South Africa)/26-c/ Aurecon proposal for Design & Construction Monitoring 	<p>PP has considered the following documents to arrive on total project cost and PP has considered the base year as 2010 hence it has used inflation indexes to translate the prices of the quotation/tender. The quotation / prices of 2011 level are reduced to cost level of 2010 by applying the inflation rate.</p> <p>Stortemelk Technical Feasibility Report – Botterkloof (price level of 2010), Equipment supplier tender document (Stortemelk HEPP, South Africa) (price level of 2011)</p> <p>Civil Construction :</p>																

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			<p>(supervision) /26-e/</p> <ul style="list-style-type: none"> • Eskom Cost Estimate Letter for construction/26-d/ • Budget Quote from “ Powertech transformers Ltd. ” for Step up transformers./26-f/ • Revolution energy Maintenance and Operational proposal/26-g/ • “NuPlanet” offer for Services for the development of the project/26-k/ • Earthworld architects (pty) ltd. /26-i/ • Quote for Architect fees/26-i/ • Deed of sale • AON insurance quote, /26-j/ • “NuPlanet” offer for the Management Contract/26-k/ 	<table border="1"> <thead> <tr> <th>Construction costs</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td>Preliminary & General</td> <td>R 7,867,000</td> </tr> <tr> <td>Site clearance</td> <td>R 11,716,965</td> </tr> <tr> <td>Power station - civil works</td> <td>R 12,505,140</td> </tr> <tr> <td>Penstock</td> <td>R 2,617,995</td> </tr> <tr> <td>Mechanical powerhouse</td> <td>R 5,800,000</td> </tr> <tr> <td>SUBTOTAL</td> <td>R 40,507,100</td> </tr> <tr> <td>Contingency 10%</td> <td>R 4,050,710</td> </tr> <tr> <td>Total Civil Construction</td> <td>R 44,557,810</td> </tr> </tbody> </table> <p>The above cost are based on Stortemelk Technical Feasibility Report – Botterkloof (price level of 2010)</p> <p>Electrical and mechanical :</p> <table border="1"> <thead> <tr> <th>Constructi on costs</th> <th>Amount</th> <th>Amount adjusted for input in 2010</th> </tr> </thead> <tbody> <tr> <td>Electrical</td> <td>R 1,609,000</td> <td>R 1,609,000</td> </tr> <tr> <td>Turbines in Euros, converted to Rands</td> <td>R 31,331,000</td> <td>R 29,890,494</td> </tr> <tr> <td>Subtotal</td> <td>R 32,940,000</td> <td>R 31,499,494</td> </tr> <tr> <td>Contingency 10%</td> <td>R 3,294,000</td> <td>R 3,149,949</td> </tr> <tr> <td>Total</td> <td>R 36,234,000</td> <td>R 34,649,444</td> </tr> </tbody> </table> <p>Cost of Electrical is as per Stortemelk Technical Feasibility Report – Botterkloof (price level of 2010).</p> <p>Cost of Turbines is as per Equipment supplier tender document (Stortemelk HEPP, South Africa) is for the year 2011 hence PP has translated the 2011 cost in 2010 by dividing 0.87 and multiplied by 0.83 to bring the all costs for the year 2010.</p> <p>Other Contracts :</p> <table border="1"> <thead> <tr> <th>Constructi on costs</th> <th>Amount</th> <th>Amount adjusted for input in 2010</th> </tr> </thead> <tbody> <tr> <td>Material</td> <td>R 1,427,896</td> <td>R 1,302,367</td> </tr> <tr> <td>Design & supervision</td> <td>R 8,314,011</td> <td>R 7,931,758</td> </tr> <tr> <td>Step up transformers</td> <td>R 1,200,000</td> <td>R 1,094,505</td> </tr> </tbody> </table>	Construction costs	Amount	Preliminary & General	R 7,867,000	Site clearance	R 11,716,965	Power station - civil works	R 12,505,140	Penstock	R 2,617,995	Mechanical powerhouse	R 5,800,000	SUBTOTAL	R 40,507,100	Contingency 10%	R 4,050,710	Total Civil Construction	R 44,557,810	Constructi on costs	Amount	Amount adjusted for input in 2010	Electrical	R 1,609,000	R 1,609,000	Turbines in Euros, converted to Rands	R 31,331,000	R 29,890,494	Subtotal	R 32,940,000	R 31,499,494	Contingency 10%	R 3,294,000	R 3,149,949	Total	R 36,234,000	R 34,649,444	Constructi on costs	Amount	Amount adjusted for input in 2010	Material	R 1,427,896	R 1,302,367	Design & supervision	R 8,314,011	R 7,931,758	Step up transformers	R 1,200,000	R 1,094,505
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				Labour & Transport	R 3,320,575	R 3,028,656																					
				Operational design review, and construction supervision and commissioning	R 565,000	R 539,023																					
				Subtotal	R 14,827,482	R 13,896,309																					
				Contingency 10%	R 1,482,748	R 1,389,631																					
				Total	R 16,310,230	R 15,285,940																					
				<p>Eskom Cost Estimate Letter for construction and Budget Quote from “ Powertech transformers Ltd.” for Step up transformers costs are for the year 2012 hence PP has translated the 2012 cost in 2010 by dividing 0.91 and multiplied by 0.83 to bring the all costs for the year 2010.</p> <p>AND</p> <p>Aurecon proposal for Design & Construction Monitoring (supervision), and Revolution energy Maintenance and Operational proposal costs are for the year 2011 hence PP has translated the 2012 cost in 2010 by dividing 0.87 and multiplied by 0.83 to bring the all costs for the year 2010.</p> <p>Other Capital Cost Items :</p>																							
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				<p>“NuPlanet” offer for Services for the development of the project, Deed of sale, AON insurance quote, “NuPlanet” offer for the Management Contract costs are for the year 2010.</p> <p>AND</p> <p>Earthworld architects (pty) ltd., quote for Architect fees are for the year 2011 hence PP has translated the 2012 cost in 2010 by dividing 0.87 and multiplied by 0.83 to bring the all costs for the year 2010.</p> <p>All the above costs are based on the offer / quotation/ technical feasibility report available before the start date of CPA and hence acceptable to the validation team. Further cross check of the CAPEX is done by the validation team; Renewable Energy Feed-In Tariff Guidelines (March 2009), page 12, Table A1.1/26-v/ has considered project cost as US \$ 3020 /kw, while the PP has considered project cost as US \$ 2501/kw (Exchange rate of R/\$ 10, as considered in REFIT order). The project cost considered by CPA is conservative than the project cost considered in REFIT document for calculation of tariff, hence acceptable to the validation team.</p>
Annual Operation and Maintenance (O&M) cost	ZAR/Ann um	2400000	Revolution energy Maintenance and Operational proposal/26-g/	<p>The O & M cost of the project is based upon the proposal from “Revolution energy” dated 08/11/2011 /26-g/which mentioned Long Term O&M (R 200000/month) i.e. 240000/annum. The same document checked and confirmed by the validation team. Further PP has considered escalation in the O & M cost at the rate of inflation in the country. Both the documents were available before the start date of the CPA, hence acceptable .Further cross check of the OPEX is done by the validation team; Renewable Energy Feed-In Tariff Guidelines (March 2009), page 12/26-v/, Table A1.1 has considered Fixed O & M cost of US \$ 39 /kw/year, while the PP has considered O & M cost of US \$ 52 /kw/year. The O & M cost considered by PP is more than the O & M cost considered under REFIT. DOE checked the effect of higher cost on the financial assessment of the project and found that even if the O & M cost considered by REFIT is applied to the project the IRR of the project will marginally increase to 8.61%, which is much below the benchmark considered for the project. DOE would like to mention here that, while applying sensitivity analysis to the project for O & M cost, validation team found that the project remains additional even if the O & M cost is reduced to ZERO.</p>

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Insurance	ZAR/Ann um	895352.5	AON insurance quote/26-j/	AON insurance quote dated November 2011 /26-j/considering insurance charges and all fees it works out to be R 895352.5/annum. The insurance cover includes Property Damage & business interruption clause including machinery breakdown, operational public liability and SASRIA etc. Further PP has considered escalation in the Insurance premiums at the rate of inflation in the country. Both the documents were available before the start date of the CPA, hence acceptable to the validation team. Furthermore validation team noted that the project remains additional even if the insurance cost is reduced to ZERO
General manager & admin	ZAR/Ann um	1200000	“NuPlanet” offer for the Management Contract to Stortemelk Hydro (Pty) Ltd./26-k/	Proposal by NuPlanet” for the Management Contract to Stortemelk Hydro (Pty) Ltd. dated December 2010 /26-k/mentions the administration cost of R 100000/month it works out to be R 1200000/annum.
Accountants	ZAR/Ann um	39519.26	Accounts transaction of Bethlehem Hydro (Pty) ltd. /26-o/	<p>The Administrative cost involves in the administration of the project apart from O & M staff namely on the account of salary/wages (staff other than O & M) and other expenses like travel, stationary etc.</p> <p>The accounting fee of R43 559.40 is 2012 figures derived from the operation of the similar type of hydro project of PP /26u/. This figure has been translated from a 2012 figure into a 2010 figure by dividing by 0.91 and multiplying by 0.83.</p> <p>DOE cross checked this cost with the Salary Survey of South Africa for Banking and Finance people /26/ and found that the admin cost considered by PP is reasonable and acceptable. Even after removal of this cost the project remains additional.</p> <p>Based on above assessment validation team accepted Administrative Cost.</p>
RSA Inflation rate	%	4.50	<ul style="list-style-type: none"> “Statistics South Africa” – Statistical Release P0141, December 2011/26-l/ The inflation target – South Africa Reserve Bank 	PP has considered Consumer Price Index as inflation rate. PP has used the inflation rate for the year 2009 to 2011 from report published by “Statistics South Africa” – Statistical Release P0141, December 2011/26-l/, which is 7.1%, 4.3% and 5% respectively. This has been further cross checked, as per South African Reserve Bank report, the inflation target rate of south Africa for the year 2012 to be ranging from 3 and 6 hence PP considered the average of 3 and 6 i.e. 4.50% which appropriate.
Tariff rate	ZAR/MW h	415.70(for the base year and increase	Eskom Integrated Report 2011 /26-q/	NERSA approved a revenue requirement of R85.18 billion and a price increase of 24.80% on tariff based sales for 2010/11. This resulted in a standard average price of 41.57c/kWh (415.70 ZAR/MWh).

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		in subsequent years)		DOE has verified the report and found it appropriate, hence acceptable. Validation team further cross checked that the project will continue to remain additional even if the expected tariff is reckoned at ZAR 940/MW has per REFIT 2009 tariff for small hydro, right through (without taking cognizance of a reduction in the tariff consequent upon decreasing cost), as the IRR works out to negative ¹ as against the benchmark of 10.90%. Therefore, the validation team accepted the tariff.
Electricity Price Escalation	%	24.80%, 25.80%, 25.90% & 4.50%	Eskom Integrated Report 2011/26-q/	Eskom applied for a 35% price increase for period 2010/11 to 2012/13. NERSA awarded Eskom/26-q/ a price escalation of 24.80% (2010/11), 25.80% (2011/12) and 25.90% (2012/13). As per the report, Government is adopting inflation linked increase in future, hence from 2013 there will not be a huge increase in prices and it will be linked with the inflation, hence escalation of 4.5% from 2013 in electricity prices are reasonable. DOE has verified the report and found it appropriate, hence acceptable; moreover the escalation in the electricity price is a conservative estimate, hence acceptable to the validation team. Had the CPA used flat electricity tariff, the IRR would have been lower.
Depreciation rate on plant & machinery	%	50%, 30% & 20%	As per section 12B(1)(h) of Income Tax Act 1962/26-p/	Investment Incentive, page 8 of Tax Guide 2010/11 /26/, checked and confirmed by the validation team. Since the source itself is from public domain document (in line with the requirement of para 111(b) of VVM version 01.2), no further cross checking is done by the validation team.
Residual value	%	10%	Assumption	Based on expertise of the Validation team members on International accounting practice it is confirmed that the considered salvage value is appropriate and standard in the market, hence acceptable. Further the residual value is converted in nominal term by giving effect of inflation rate of the country. The value is again converted in to real for calculation of IRR.
Promoters Contribution	% ZAR	Debt : 0% Equity : 100%	<ul style="list-style-type: none"> • 20120822_FModel_36_Equity investment 1, • 20120822_FModel_37_Equity investment 2, 	This project is 100% equity funded project. Same is been verified from the declaration/26-x/ given by the CPA implementer and hence acceptable to the validation team.

¹To check the IRR with tariff of ZAR 940/MWh(as per REFIT), readers are advised to use tariff without escalation. Direct changing the tariff in IRR spread sheet will yield incorrect result as the tariff is subjected to escalation, which is not correct for the bid based tariff(REFIT Tariff). As explained in the text given above, the tariff is fixed and subject to only reduction consequent upon decreasing cost.

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			<ul style="list-style-type: none"> • 20120822_FModel_38_Equity investment 3 • 20120822_FModel_39_Equity investment 4. 	
Corporate tax rate	%	28%	SARS (South African Revenue Service) Guide on Taxation in South Africa 2010/11/26-p/	The guide published by SARS /26-p/confirms the Rate of Tax of 28% and hence acceptable to the validation team.

All the above said documents in table are prepared by a third party and prepared before the start date of the CPA i.e. 01/05/2013

As evident from the details given above, the validation had evaluated the parameters used in the financial calculations and the validation team confirms that the underlying assumptions are appropriate and the financial calculations are correct.

All the input parameters have been sourced from the above documents mentioned in the table prepared by reputed third party consultant. As the time between preparation of technical feasibility report and the start of validation is more than 1.5 years, cost for the project and other operational cost is adjusted as per the inflation rate of the host country. Validation team concludes that the input parameters are reliable, credible and appropriate for the project activity and conforms to Annex 5, EB 62. Thus, the Validation also conforms to the guidance given vide paragraph 110 and 111 of VVM (1.2).

Cross checking parameters: Investment cost, O&M cost, PLF and project life time have been cross checked with above said documents furnished by the project developer, while the salvage value, taxation and depreciation is based on the standard accounting practice followed universally. All the published documents were accessed from the website. Below mentioned reports were produced for the verification:

- Stortemelk Technical Feasibility Report – Botterkloof/09/
- Equipment supplier tender document (Stortemelk HEPP, South Africa)/26-c/
- Aurecon proposal for Design & Construction Monitoring (supervision)/26-e/
- Eskom Cost Estimate Letter for construction/26-d/
- Budget Quote from “Powertech transformers Ltd.” for Step up transformers./26-f/
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- AON insurance quote,/26-j/
- “NuPlanet” offer for the Management Contract, /26-k/
- Government Decrees and tax regulation/26-m/n/o/p/
- REFIT 2009 /26-v/

All the reports have been prepared by qualified power consultancies contracted by the project participant, whom the Validation Team interviewed during validation process. The documents supporting the financial calculations, in the opinion of Validation Team, are therefore authentic and appropriate. The input parameters were also assessed based on sectoral scope expertise of the validation team and found to be appropriate.

Thus, the guidance given by the EB vide paragraphs 111 of VVM (1.2) has been taken care of in validation of the project.

Assessment of correctness of computation: The assessment involved checking the data input extracted from said reports and other published documents (mainly Government), adoption of correct

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accounting principle and arithmetical accuracy. Validation Team checked the all reports, published Government documents and ensured that right input has been taken in the project cost and projections. The accounting principles adopted with respect to computation of depreciation was found to be in order. The arithmetical accuracy was also found to be correct. Thus, the validation has taken into consideration the guidance given by EB vide paragraphs 111 and 114 of the VVM (01.2).

The Equity IRR has been computed for a period of 20 years of operation, which is in conformity with the Annex 5 of EB 62 and Annex 15 of EB 50. As required by Annex 5 of EB 62, the expected realisation on the sale of assets at the end of the operating life has been taken as salvage value in the terminal year. In computing the equity IRR, the PP has taken into account, depreciation and salvage value (in the terminal year). The principle adopted conforms to the accepted accounting principles.

Based on the above, the Equity IRR works out to 8.15 % as compared to 2.8% given in web hosted PDD and the benchmark of 10.90%.

3.5.6 Sensitivity analysis

According to paragraph 20 of the “Guidelines on the assessment of investment analysis” (Version 05) only variables that constitute more than 20% of either total project costs or total project revenues should be included in the sensitivity analysis. In addition the sensitivity analysis should at least cover the range of +10% and -10%. The following variables were included in the sensitivity analysis:

- Investment cost bifurcated in to Civil Construction and Electrical and Mechanical Construction;
- Operations and maintenance costs;
- Electricity Generation
- Electricity Tariff
- General Management and Administration

The results of the sensitivity analysis are shown in Table below:

Parameter	Impact on Equity IRR of Parameter Variation (%)			
	-10%	-5%	+5%	+10%
Electricity Tariff	6.7	7.3	9.0	9.5
Civil Construction	8.7	8.4	7.9	7.6
Electrical and Mechanical construction	8.6	8.4	7.9	7.8
Operation and Maintenance Costs	8.3	8.2	8.1	8.0
Net Annual Electricity Generation	6.7	7.3	9.0	9.5
General Management and Administration	8.2	8.2	8.1	8.1

A further analysis of the projections reveals that the projects would become *non-additional* only in the following cases:

Parameters	Variation	Assessment by validation team
Investment cost comes down by	Civil Cost by 50%, Electrical and Mechanical cost by 65%	Investment analysis has been done based on a conservative assessment and values like Access roads, contingency and project management investment costs have been taken lower than the values considered in the REFIT order for tariff calculation. it could be safely assumed that investment costs are unlikely to come down by 50% in civil or 65% in Electrical and Mechanical cost
Operating costs come and General Management and Administration down by	NA	A breakeven could not be achieved even in case operating costs are reduced to 0.
Revenues increased by	20%	Tariff for the project is considered on the basis of NERSA document, additionally PP has

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		considered escalation in tariff by 4.5), which is again based on the government declaration. So a chance of increase in tariff by 20% for a period of 20 years seems to be highly unrealistic. Also the probability of annual generation increasing in such a manner as to increase revenues by 20 % is remote as the electricity generation from hydro power project is dependent upon hydrological data and since the third party engineering company contracted by PP has estimated the PLF based on these hydrological data, higher generation on sustained basis for period of 20 years is not possible.
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The results of the sensitivity analysis demonstrate that an investment in the project activity, in the absence of CER revenues, is unattractive. Validation team has taken into consideration the guidance given by EB vide §111(e) of VVM, version 01.2/B01/.

Validation Team is in agreement with PP's submission regarding additionality. Having regard to the assessment of conformity of additionality demonstration and benchmark selection to the latest version of the Guidance issued by EB on the assessment of investment analysis, plausibility and appropriateness of parameters used and correctness of financial calculations, Validation Team concludes that the project scenario is not economically feasible and the project developer would not have ventured into this project without CDM benefits.

3.6 Emission Reduction

3.6.1 Parameters determined ex-ante

Referring to the real-case CPA-DD Section B.5, the parameters for determining the combined margin emission factor ($EF_{grid,CM,y}$) have been clearly described in tabular format in accordance with the monitoring methodology AMS-I.D./ Version 17 in connection to the "Tool to calculate the emission factor for an electricity system/ Version 02.2.1". The value of $EF_{grid,CM,y}$ for the CPA is correctly determined based on the best available information during the GSP of PoA-DDs (i.e. 04/04/2012 to 03/05/2012). The table below describes how the validation team cross-checked the calculation of emission the factor of the grid ($EF_{CO_2, grid,y}$):

STEP	DESCRIPTION	DETERMINATION AND ASSESSMENT	JUSTIFIED
1	Identify the relevant electricity systems.	The project electricity system includes all power plants attached to the Republic of South Africa national grid. The electricity system in South Africa is a single system, i.e. South African national grid as confirmed by Eskom Integrated report /B08/. The DNA of South Africa has not published the delineation of the project electricity system and connected electricity systems, however the national utility, Eskom, has published it /B08/.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2	Choose whether to include off-grid power plants in the project electricity system (optional).	Option I (Only grid power plants are included in the calculation) is selected.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3	Select a method to determine	Simple OM (out of the four methods	<input checked="" type="checkbox"/> Yes

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	the operating margin (OM).	<p>provided in the tool /B03/) is applied for the calculation of the operating margin, since the low-cost/must-run resources constitute less than 50% of total South African grid generation.</p> <p>The average values of the five most recent years shows that coal-fired power plants constitute approximately 92.84% of the South African generation capacity, whereas hydro and nuclear, both classified as low-cost and must-run power plants, constitute 0.00% of the national grid. /B08/</p> <p>The validation team confirms that data applied is consistent with the report published by Eskom. Thus the selection of OM calculation method is justified.</p>	<input type="checkbox"/> No
4	Calculate the operating margin emission factor ($EF_{grid,OM,y}$) according to the selected method.	<p>In the PoA DD, Option A, is selected to calculate the operating margin emission factor.</p> <p>The validation team confirms that data of quantity of electricity generated, types of fuel used and consumption of each fuel type are the latest 3 years data, most recent data available at the time of submission of the CDM-DDs to the DOE for validation and they are sourced from available data published by the Eskom and IPCC/B08/ which is the default value. PP has considered /03/, the Option A (A for coal-fired power plants/units, as data on fuel consumption and electricity generation for each coal-fired power unit m is available and option B for gas turbine power plants as for gas turbine power plants data on fuel consumption are not available and only data on electricity generation is presented in the public domain for the calculation of simple OM, which is in line with the requirement of tool /B03/. The entire data base explained in Section B.6.2 & Annex 3 of the PoA DD /03/ which is sourced from Eskom website.</p> <p>Therefore, the calculated OM = 0.92tCO₂/MWh is correct and in line with the requirements of tool.</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5	Calculate the build margin (BM) emission factor.	Option 1) is chosen in which the BM is calculated ex-ante for the first crediting period of the PoA based on	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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		<p>the most recent available data at the time of submission of the CDM-DDs to the DOE for validation i.e., for the year 2011</p> <p>Validation team based on document review/B08/ confirms that the annual electricity generation of the set of five power units (SET5-units) is larger than the annual electricity generation of the set of power capacity additions in the electricity system that comprise 20% of the system generation and that have been built most recently (AEG>20%) and the power units in SET_{sample} started to supply electricity to the grid less than 10 years. Also they do not include registered CDM projects.</p> <p>The validation team confirms that the BM calculation is correctly applied complying with the Tool.</p> <p>Therefore, BM = 0.87tCO₂/MWh is justified.</p>	
6	Calculate the combined margin (CM) emissions factor.	<p>According to the “<i>Tool to calculate the emission factor for an electricity system</i>” (Version 02.2.1) /B03/, the default weights applicable for hydro projects are wOM = 0.5 and wBM = 0.5. The CM has been calculated for the first crediting period and fixed ex-ante.</p> <p>The weighting of OM emission factor and BM emission factor for calculate CM emission factor is categorized by type of CDM project.</p> <p>The calculation of CM = 0.90 tCO₂/MWh is justified.</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

The CM is fixed for the first crediting period of CPA /02/.

Validation team further compared the arrived value of OM and BM with other CDM registered renewable energy project (though it for different data vintage, hydro project – UNFCCC ref no 2692) and found that the OM and BM values are comparable with this project.

Other parameters that are to be reported ex-ante in the CPA DD /02/ are:

(ii) Installed capacity of the hydro power plant before the implementation of the project activity. (Cap_{PJ}).

(iii) 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). (A_{BL})

3.6.2 Emission reduction calculation

The CPA-DD /02/ confirms to meet the procedures provided in the methodology /B02/ and PoA-DD /05/. The formulae are correctly presented for the determination of emission reductions.

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The calculations of GHG emission reductions are transparently documented in PoA-DD with assumptions in PoA-DD Section E.6, generic CPA-DD & the real-case CPA-DD Section B.5 regarding the forecast emission reductions. The validation team could confirm the estimation of emission reductions have been calculated in accordance to the approved methodology.

According to the selected methodology AMS-I.D./Version 17, the emission reductions (ER_y) by a CPA during the crediting period is the difference between the baseline emissions (BE_y), project emissions (PE_y) and emissions arising from leakage (LE_y), which is expressed as follows:

$$ER_y = BE_y - PE_y - LE_y$$

Regarding to the leakage (LE_y), through document review and on-site interview, the validation team did not notice any equipment transfer from any other programme activity to the proposed CPA, or existing equipment of the CPA to another programme activity.

Thus there is no leakage in the CPA according to the definition of applied AMS-I.D /version 17 paragraph 20.

Proposed CPA will be implemented in an existing reservoir with no change in the volume of reservoir which was confirmed by reviewing Technical feasibility report /09 and EIA report/13/, hence the reservoirs methane emission is not applicable. Project emission considered zero, Hence, PE_y= 0

Leakage is considered as negligible in accordance with AMS-I.D./Version 17, and hence can be assumed as zero. While the project emissions & leakage are zero, baseline emissions (BE_y) are equal to the emission reductions (ER_y) due to the project activity and have been estimated to be 24 353 tCO₂e per year in the real-case CPA-DD /02/, based on an ex-ante fixed baseline emission factor of 0.90 tCO₂e/MWh in the PoA-DD /05/and the real-case CPA-DD/02/.

The CPA-DD confirms to meet the procedures provided in the methodology /B02/ and PoA-DD /05/. The formulae are correctly presented for the determination of emission reductions.

CCL has assessed the calculations of emission reductions and emissions factor. Corresponding calculations have been carried out based on calculation spreadsheets /04/. The parameters and equations presented in the CPA-DD, as well as other applicable documents, have been compared with the information and requirements presented in the PoA-DD /05/, CPA-DD template /05/ and the methodology /B02/.

3.6.3 Parameters monitored ex-post

The validation team checked the real-case CPA-DD Section B. 6, both monitoring parameters have been correctly demonstrated which are consistent to the monitoring parameters in PoA-DD, so that the validation team considers the correct demonstration in the real-case CPA-DD.

Data monitored for CDM purposes will be collected, calculated and recorded in electronic and paper form. All the data will be kept until two years after the end of the crediting period or the last issuance of CERs of this project, whichever occurs later.

A detailed monitoring manual is designed by CME /10/ to ensure that the monitoring plan is implemented and all the monitoring arrangements are feasible within the PoA design.

All other parameters used in Emission Reduction calculations are prescribed by the applied approved methodology AMS-I.D, version 17 /B02/.In summary, the calculations of emission reductions are considered to be correct and according to requirements.

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3.7 Monitoring Plan

The monitoring plan presented in the CPA-DD /02/ complies with the requirements of the PoA-DD/05/, the applied monitoring methodology /B02/. The assessment team has verified all parameters in the monitoring plan against the requirements of the methodology and no deviations have been found.

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

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

- (i) Net electricity supplied to the national grid by the proposed hydropower plant (EGBL, y);
- (ii) Quantity of fossil fuel consumed by the project activity in year, y (FC, i, y) _
- (iii) Net calorific value of fossil fuel in year, y (NCV_{i,y})
- (iv) Emission factor of fossil fuel in year, y (EF_{CO₂,i,y})

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

The responsibilities and institutional arrangements for data collection and archiving have been clearly provided. The information provided in the CPA-DD /02/ could be confirmed based on the on-site interviews and also through the submitted documentary evidence namely CME management system /07/ covering all requirements as stated in section E.7.2 of PoA DD /05/. Based on the same, it can be confirmed that the CME and the CPA implementer will be able to implement the monitoring plan and the achieved emission reductions can be reported ex-post and verified.

3.8 Stakeholder Consultation

It has been indicated in the PoA-DD/05/, that the local stakeholder consultation shall be done at the CPA level. This is deemed appropriate in the context of the PoA as CPAs under this PoA will be located in different locations with varying local conditions it is appropriate that comments are invited at CPA level. This will ensure that the PoA supports sustainable development appropriately in the CPA locality.

For the CPA level local stakeholder's consultation, validation team based on reviewing the related documents submitted by the CME/29/ confirms that it has been done before the GSC period. The relevant local stakeholders have been invited through newspaper advertisements/29/. The summary of this stakeholder meeting is provided to the validation team. The validation team has reviewed the documentation in order to validate the inclusion of relevant stakeholders. Validation team based on its local expertise has confirmed that the communication method used to invite the stakeholders is appropriate.

Validation team reviewed all relevant information of local stakeholder consultation meeting /29/ and confirms that the LSC meeting meets to the requirement of § 127 of VVM, Ver 01.2 /B01/. The validation team confirms that the process for conducting the local stakeholders meeting is adequate and credible.

3.9 Environmental Analysis

It has been indicated in the PoA DD /05/ that environmental analysis shall be provided at the CPA level. This is deemed appropriate and acceptable to the validation team.

The CPA involves hydroelectric power installation at Botterkloof Dam in South Africa. Referring to § 132 of VVM version 01.2, /B01/ validation team, based on document review, using official source i.e. Environmental Impact Assessment Regulations (GN 385, 21 April 2006) of the National Environmental

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Management Act No 107 of 1998. According to regulations, a basic environmental impact assessment (EIA) is required for a typical CPA included under the PoA.

The CPA implementer has commissioned an Environmental Impact Assessment (EIA)/13/ of the CPA01 activity at the Stortemelk Hydro as required by the South African environmental regulation in place. EIA process involved consideration of the environmental status of the project location, the purpose and need for the project, views and concerns of interested and affected parties, and compliance with environmental legislation and guidelines.

The potential environmental impacts on visual, flora & fauna, aquatic ecosystem and erosion etc. have been sufficiently identified. No significant environmental impacts are expected from the project activity. Environmental Authorisation to proceed by Free State Province's Department of Economic Development, Tourism and Environmental Affairs (Authorisation Register Number EMB/IK, IM, 4/07/93- dated 09/12/2009) /14/.

The validation team confirms that the environmental impact assessment is adequate and credible.

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APPENDIX A

THE VALIDATION PROTOCOL FOR CDM PROGRAMME OF ACTIVITIES

Title of CPA:

NuPlanet Small Scale Hydropower PoA - CPA1Stortemelk

Title of PoA to which CPA is to be included:

“NuPlanet Small Scale Hydropower PoA”

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Table 1: Conformity of CDM Programme of Activities (CPA)

CPA Title: NuPlanet Small Scale Hydropower PoA – CPA1 Stortemelk

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	GSP	Final
A. GENERAL DESCRIPTION OF CDM PROGRAMME ACTIVITY (CPA)				
A.1. Title of the CPA:				
A.1.1. Does the used CPA title clearly enable to identify the unique CDM programme activity?	/01/ /Bo4/	<p>The title of the CPA (CDM-SSC-CPA-DD) clearly enables to identify the unique CDM programme of activities (CDM SSC-PoA-DD). However, the LoA is required to be submitted by the project participant to verify the same.</p> <p>CAR 1: Letter of Approval (LoA) from the Host Country (Republic of South Africa) has not been provided to DOE for Validation.</p>	CAR-1	OK
A.1.2. Are there any indications concerning the revision number and the date of the revision?	/01/ / Bo4/	<p>The Specific CPA-DD has indicated in Section A.1. The version of the document, i.e. version number 1.0, and the date of the document, i.e. 24th of March 2012.</p> <p>However the date has not been presented according to the prescribed format, i.e. DD/MM/YYYY. Hence a CAR has been raised.</p> <p>CAR 2: The dates provided in Sections A.1 and A.4.2.1. of the Specific CPA-DD are not presented as per the standard format i.e. DD/MM/YYYY.</p> <p>Furthermore, the table's title is referring to the "PoA DD History" and therefore it is not clear whether the date is applicable to the Specific CPA-DD or to the PoA-DD. Hence a CL has been raised.</p> <p>CL 1: It is not clear to which document the date, provided in Table 1 as presented in Section A.1. of the Specific CPA-DD, does apply.</p>	CAR-2 & CL-1	OK
A.1.3. Is this consistent with the time line of	/01/, /B04/	Depending on closure of CAR 2 in section A.1.2. above.	Refer	OK

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the programme's history?			CAR 2	
A.2. Description of the CPA:				
A.2.1. Is the description delivering a transparent overview of the CPA?	/01/, /B04/	<p>No, Section A.2. of the Specific CPA-DD does not provide a clear overview of the CPA as it does not clearly state the purpose of the CPA and how it reduces GHG emissions, the pre-project scenario and the implementation-schedule. Hence a CAR and a CL have been raised.</p> <p>CAR 3: Description of CPA under section A.2 of the Specific CPA-DD does not provide information on:</p> <ul style="list-style-type: none"> • the purpose of the CPA • how the CPA reduces GHG emissions • scenario prior to the project activity • implementation schedule for the CPA <p>CL 2: The description of the small-scale CPA in Section A.2 of the Specific CPA-DD does not allow the reader to establish clearly whether the project activity involves a greenfield-site, retrofitting or involves replacement of an existing hydroelectric power installation at the site.</p>	CAR 3 & CL 2	
A.2.2. Is the project implementation schedule available; are there any risks for delays?	/01/, /B04/	An indicative project implementation programme has been submitted; however this has not been described in Section A.2. of the Specific CPA-DD. Hence depends on the closure of CAR 3 in section A.2.1 above.	Refer CAR 3	OK
A.2.3. Is CPA specific data clearly indicated as per CPA template?	/01/, /B04/	Depends on the closure of CAR 2 in section A.1.2 above.	Refer CAR 2	OK
A.2.4. What proofs are available demonstrating that the programme description is in compliance with the actual situation or planning?	/01/, /B04/	Depends on the closure of CAR 3 in section A.2.1 above.	Refer CAR 3	OK
A.2.5. Is the information provided by these proofs consistent with the information provided by the CPA-DD and the PoA-DD?	/01/, /B04/	Depends on the closure of CAR 3 in section A.2.1 above.	Refer CAR 3	OK

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A.2.6. Is all information presented consistent with details provided by further chapters of the CPA-DD and the PoA-DD?	/01/, /B04/	Depends on the closure of CAR 3 in section A.2.1 above.	Refer CAR 3	OK
A.3. Entity/individual responsible for the CPA:				
A.3.1. Does it become evident which entity/individual is responsible for the CPA (the CPA implementer)?	/01/, /B04/	It is evident from both the Specific CPA-DD and the CPA-DD that NuPlanet Project Development (Pty) Ltd is the entity responsible for the small-scale CPA. However it is not clearly described that this is the same entity which can be referred to as the CPA implementer. Hence a CAR has been raised. CAR 4 In Sections A.3. of both the Specific CPA-DD and the CPA-DD, it has not been explicitly described whether the entity that is responsible for the small-scale CPA can be referred to as the CPA implementer.	CAR 4	OK
A.3.2. Is there any document substantiating that the stated entity/individual is responsible for the implementation of the CPA?	/01/,	Depends on the closure of CAR 1 in section A.1.1 above.	Refer CAR 1	OK
A.3.3. Is all information on the CPA implementer provided in consistency with details provided by further chapters of the CPA-DD (in particular annex 1)?	/01/	The name of the entity responsible for the small-scale CPA, as stated in Section A.3. of the Specific CPA-DD, is consistent with Annex 1 of the Specific CPA-DD. However depending on the closure of CAR 4 in section A.3.1. above.	Refer CAR 4	OK
A.4. Technical description of the CPA:				
A.4.1. Identification of the CPA:				
A.4.1.1. Is the Host Party stated and consistent with the information provided in the PoA-DD?	/01/, /B04/	Yes, as stated in Section A.4.1.1. of both the Specific CPA-DD as the CPA-DD, Republic of South Africa is indicated as the Host Party, which is in line with the PoA-DD.	OK	
A.4.1.2. Does the information provided on the location of the programme activity allow for a unique identification of the location and the boundary of the CPA	/01/, /B04/	Yes, the information provided on the location of the programme activity allows for a unique identification of the location and the boundary of the CPA in terms of the geographical area. However it has been observed that the Latitude and Longitude degrees as provided in the CPA-DD are not consistent with supporting	CAR 5	OK

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<p>in terms of the geographical area?</p>		<p>documentation. Furthermore Section A.4.1.2. is not in compliance with the guidelines of CDM-SSC-CPA-DD Form (version 01) as it is exceeding the maximum limitation of 1 page. Hence a CAR and a CL have been raised.</p> <p>CAR 5 Section A.4.1.2. of the Specific CPA-DD is exceeding the maximum of one page.</p> <p>CL Information allowing for unique identification of the CPA is not consistent with supporting documentation.</p>		
<p>A.4.1.3. Are the geographic reference and the means of identification transparent and clear? Is GPS data provided?</p>	<p>/01/, /B04/</p>	<p>Refer CAR 5 in section A.4.1.2. above.</p>	<p>Refer CAR 5</p>	<p>OK</p>
<p>A.4.1.4. How it is ensured and/or demonstrated, that the project proponents can implement the project (ownership, licenses, contracts etc.)?</p>	<p>/01/</p>	<p>Depends on the closure of CAR 1 in section A.1.1 above.</p>	<p>Refer CAR 1</p>	<p>OK</p>
<p>A.4.2. Duration of the CPA: Description of a typical CDM programme activity (CPA)</p>				
<p>A.4.2.1. Is the starting date of the CPA provided?</p>	<p>/01/, /B04/</p>	<p>Yes, as stated in Section A.4.2.1. of the Specific CPA-DD, the expected start date is September 2012.</p>	<p>OK</p>	<p>OK</p>
<p>A.4.2.2. Is the starting date consistent with the PoA timeline and the requirements of the PoA procedures?</p>	<p>/01/, /B04/</p>	<p>As the PoA validation has started on 04/04/2012 and the indicated start date of CPA is September 2012, it is considered to be consistent with the PoA timeline and the requirements of the PoA procedures.</p>	<p>OK</p>	<p>OK</p>
<p>A.4.2.3. Is the operational lifetime of the CPA clearly defined and plausible?</p>	<p>/01/</p>	<p>Yes, as stated in Section A.4.2.2. of the Specific CPA-DD is 30 years. However this has not been substantiated with supporting documentation. Hence a CL is raised.</p> <p>CL 3: Supporting documentation is requested from the project participants to substantiate the operational lifetime of the CPA as stated in Section A.4.2.2. of the Specific CPA-DD.</p>	<p>CL 3</p>	<p>OK</p>

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A.4.3. Choice of the crediting period and related information:				
A.4.3.1. Is the starting date of the crediting period stated and plausible (in accordance with the PoA procedures)?	/01/, /B04/	Yes, the starting date of the crediting period has been provided in Section A.4.3.1., as 1 st of January 2014 and considered plausible and in accordance with the PoA procedures.	OK	OK
A.4.3.2. Is it evident that fixed crediting period is chosen, what is the length of the crediting period?	/01/, /B04/	As per Section A.4.3., it is evident that fixed crediting period has been chosen and that the length of the first crediting period is 10 years and 0 months.	OK	OK
A.4.4. Estimated amount of emission reductions over the crediting period:				
A.4.4.1. Estimated amount of emission reductions stated?	/01/, /B04/	The estimated amount of emission reductions as stated in the CPA-DD, Section A.4.4., is 172.662 tCO ₂ e.	OK	OK
A.4.4.2. Is the estimated amount consistent with section B 5 of the CPA-DD?	/01/, /B04/	Estimated amount of CERs under section A.4.4 is consistent with section B.5.2. of the Specific CPA-DD.	OK	OK
A.4.5. Public funding of the programme activity				
A.4.5.1. Is the information provided on public funding in compliance with the actual situation or planning?	/01/, /B04/	As stated in Section A.4.5. of the Specific CPA-DD, no public funding was used in the development of the CPA. This is being supported by an official letter from the CME.	OK	OK
A.4.5.2. Is all information provided consistent with the details given in remaining chapters of the CPA-DD (in particular annex 2)?	/01/, /B04/	Not applicable, refer section A.4.5.1. above.	OK	OK
A.4.6. Confirmation that the CPA is neither registered as an individual CDM project activity or is part of another registered PoA				
A.4.6.1. Confirmation provided by coordinating/managing entity or CPA implementer?	/01/, /B04/	The CME confirms in Section A.4.7. of the CPA-DD that the small-scale CPA is neither registered as an individual CDM project activity nor is it part of another registered PoA. However the same is required to be substantiated with supporting evidence. Hence a CL has been raised. CL 4: It has to be substantiated with appropriate evidence that “NuPlanet Small Scale Hydropower PoA – CPA1 Stortemelk” is not registered as an individual CDM project activity nor is it part of another registered PoA.	CL4	OK

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<p>A.4.6.2. Is the CPA implementer undertaking another similar project activity in the same region? If yes, are the project activities uniquely identified and not overlapping with this CPA?</p>	<p>/01/, /B04/</p>	<p>As per supporting documentation and the UNFCCC-website, it has been concluded that the CME has been involved with the development of another hydropower station, located on the same river. However it has not been clearly indicated in the CPA-DD that both these undertakings can be uniquely identified in order to ensure that the other similar activity is not overlapping with this CPA. Hence a CL has been raised.</p> <p>CL 5: Further clarification is being requested on how this CPA and the development of the other hydropower station on the same river can be uniquely identified and if so, how this is done.</p>	<p>CL-5</p>	<p>OK</p>
<p>B. ELIGIBILITY OF THE CPA AND ESTIMATION OF EMISSION REDUCTIONS:</p>				
<p>B.1. Title and reference of the registered PoA to which CPA is added:</p>				
<p>B.1.1. Are the title and reference correctly provided?</p>	<p>/01/, /B04/</p>	<p>The title of and reference to the registered PoA to which the small-scale CPA is added has not been done correctly as the title provided in Section B.1. of both the CPA-DD and the Specific CPA-DD is not consistent with the title of the registered PoA: "NuPlanet Small Scale Hydropower PoA". Hence a CAR has been raised.</p> <p>CAR 6: In Section B.1. of both the CPA-DD and the Specific CPA-DD is not being referred to the correct PoA to which this small-scale CPA is added.</p>	<p>CAR-6</p>	<p>OK</p>
<p>B.2. Justification of why CPA is eligible to be included in the registered PoA:</p>				
<p>B.2.1. Does the CPA meet all the eligibility criteria as stipulated under section A.4.2.2 of the SSC-CDM-PoA-DD?</p>	<p>/01/, /B04/</p>	<p>In Section B.2. of the CPA-DD, the inclusion of the small-scale CPA has been justified by demonstrating that the eligibility criteria as per the "Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Programme of Activities (Version 01.0)" have been taken into consideration.</p>	<p>OK</p>	<p>OK</p>
<p>B.2.2. Is the geographical boundary of the CPA including any time-induced boundary consistent with the geographical boundary set in the PoA?</p>	<p>/01/, /B04/</p>	<p>Yes, as stated in B.2. of the Specific CPA-DD, the CPA is located within the Republic of South Africa, which is within the geographical boundary of the PoA.</p>	<p>OK</p>	<p>OK</p>

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<p>B.2.3. Is unique identifications of CPA project location (e.g. wind site etc.); are clearly ant transparently provided to avoid double counting of emission reductions?</p>	<p>/01/, /B04/</p>	<p>Yes, the geographical coordinates have been provided in Section A.4.1.2. of the Specific CPA-DD. However in the table in Section B.2. of the Specific CPA-DD is being referred to Section A.4.1. Furthermore the geographical coordinates are not consistent with supporting documentation. Hence two CLs have been raised.</p> <p>CL 6: In the table in Section B.2. of both the Specific CPA-DD and the CPA-DD is incorrectly being referred to Section A.4.1. of the same documents respectively, i.e. the geographical coordinates.</p> <p>CL 7: Regarding the geographical coordinates of the CPA, consistency must be established between Section A.4.1.2. of the Specific CPA and supporting documentation.</p>	<p>CL-6 & CL-7</p>	<p>OK</p>
<p>B.2.4. Is specification of technology/measure including the level and type of service, performance specifications including compliance with testing/certifications are in line with the CDM-POA-DD?</p> <p>-</p>	<p>/01/, /B04/</p>	<p>In the table in Section B.2. of both the Specific CPA-DD and the CPA-DD, it has not been clearly described whether the CPA meets this criterion. Furthermore the criterion itself, as provided in the table in Section A.4.1.2. of the PoA-DD, is not in line with this specific criterion as stated in the “Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Programme of Activities (Version 01.0)”. Hence is being referred to CAR 8 in Table 1 pertaining to the PoA-DD and has a CL been raised. Refer CAR 8 of Table 1, section A.4.2.10. CL 8: It has not been clearly described in both the Specific CPA-DD and the CPA-DD how the criterion 14.(c) of the “Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Programme of Activities” (Version 01.0), is being met.</p>	<p>Refer CAR 8 of Table 1 pertaining to the PoA-DD. & CL 8</p>	<p>OK</p>
<p>B.2.5. Is the start date of the CPA is clearly evidenced?</p>	<p>/01/, /B04/</p>	<p>Yes, as stated in B.2. of the Specific CPA-DD, it is expected that the start date of the CPA will be in September 2012, as being the first date of real action, i.e. ordering of equipment and which is after the commencement of validation.</p>	<p>OK</p>	<p>OK</p>

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<p>B.2.6. Is it ensured that the CPA complies with applicability and other requirements of single or multiple methodologies?</p>	<p>/01/, /B04/</p>	<p>No, nor in Section B.2. of both the Specific CPA-DD and the CPA-DD and in Section A.4.2.2. of the PoA-DD it has been demonstrated that criterion (e) as per paragraph 14. of the “Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Programme of Activities (Version 01.0)” has been met, as it has not been demonstrated that the CPA meets all the criteria as laid down by the applied methodology AMS-I.D. Hence a CAR has been raised.</p> <p>CAR 7: In Section B.2. of the Specific CPA-DD it is not demonstrated that the CPA is meeting all the criteria as laid down by the applied methodology AMS-I.D.</p>	<p>CAR 7</p>	<p>OK</p>
<p>B.2.7. Is it ensured that CPAs meet the requirements pertaining to the demonstration of additionality as specified in PoA-DD?</p>	<p>/01/, /B04/</p>	<p>Yes, as stated in Section B.2. of the Specific CPA-DD, the CPA will demonstrate additionality using the investment barrier argument as described in Attachment A of Appendix B of 4/CMP.1 Annex II</p>	<p>OK</p>	<p>OK</p>
<p>B.2.8. The PoA-specific requirements stipulated by the CME including any conditions related to undertaking local stakeholder consultations and environmental impact analysis;</p>	<p>/01/, /B04/</p>	<p>Yes, as stated in Section A.4.2.2. of the PoA-DD and in table B.2. of the CPA-DD, local stakeholder consultation and environmental impact assessment will take place at CPA-level which is being confirmed in Section B.2. of the Specific CPA-DD. Evidence thereof has been provided in supporting documents.</p>	<p>OK</p>	<p>OK</p>
<p>B.2.9. Does CPA provide an affirmation that funding from Annex I parties, if any, does not result in a diversion of official development assistance?</p>	<p>/01/, /B04/</p>	<p>Yes, as stated in Section A.4.2.2. of the PoA-DD and in Section B.2. of the CPA-DD, in situations where development assistance has been received, written confirmation from the assistance provider, stating that this has not resulted in a diversion of ODA, will be submitted by the project participant(s). However as provided in Section B.2. of the Specific CPA-DD, no development assistance has been received.</p>	<p>OK</p>	<p>OK</p>
<p>B.2.10. Are the target group (e.g. domestic/commercial/industrial, rural/urban, grid- connected/off-grid) and distribution mechanisms (e.g. direct installation) well defined and</p>	<p>/01/, /B04/</p>	<p>No, target group and the distribution mechanisms are not defined at either PoA- or at CPA-level. Neither has it been clearly justified that this is not applicable. Hence a CL has been raised.</p> <p>CL 9:</p>	<p>CL 9</p>	<p>OK</p>

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documented in the CPA?		Target group(s) and distribution mechanism(s) have not been defined in the PoA nor CPAs neither has it been justified that these are not applicable.		
B.2.11. Where applicable, the conditions related to sampling requirements for a PoA in accordance with the approved guidelines/standard from the Board pertaining to sampling and surveys are applied?	/01/, /B04/	This is not applicable as all CPAs under this PoA will be subject to verification.	N/A	
B.2.12. the conditions that ensure that every CPA in aggregate meets the small-scale or micro-scale threshold criteria and remains within those thresholds throughout the crediting period of the CPA;	/01/, /B04/	<p>No, it has not been clearly described why criterion (k) as per paragraph 14 of the “Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Programme of Activities (Version 01.0)” is not applicable as stated in Section A.4.2.2. of the PoA-DD. Hence a CL has been raised.</p> <p>CL 10: It is not clear why criterion (k) as per paragraph 14 of the “Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Programme of Activities (Version 01.0)” is not applicable due to the nature of the CPAs included in this PoA.</p>	CL-10	OK
B.2.13. Where applicable, the requirements for the de-bundling check, in case CPAs belong to small-scale (SSC) or micro-scale project categories are fulfilled?	/01/, /B04/	<p>Yes, as stated in Section A.4.2.2. of the PoA-DD and in Section B.2. of the CPA-DD, the CPAs will demonstrate not to be a debundled project through application of the latest applicable and approved version of the “Guidelines on assessment of debundling for SSC project activities.</p> <p>This has been confirmed in Section B.2. of the Specific CPA as is stated that there are no similar projects within 1 km from the CPA.</p>	OK	OK
B.3. Assessment and demonstration of additionality of the CPA, as per eligibility criteria listed in the registered PoA:				
B.3.1. Are the key criteria and data for assessing additionality of a CPA that are included appropriately?	/01/, /B04/,	<p>PP needs to clarify following points:</p> <ul style="list-style-type: none"> Decision making document does not say that the CDM was a decisive factor for the project. PP took decision for the project in November 2010, kindly 	CL-15	OK

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		<p>justify, how the input parameters considered meets the requirement of para 6 of EB-62, Annex 5, Ver 5.</p> <ul style="list-style-type: none">• Key input parameters are not included in CPA-DD; kindly include all the key parameters in PDD.• Amount in file named "20120803_FModel_03_billofquantities" for bill of quantity is 2287000 (unit is not known); while in financial assessment sheet it is R 38177810. Kindly give the reason for same. PP has submitted breakup for Section A only. Kindly provide the breakup of section B, C, D, E and F also.• Cost of accountants doc 13 needs to be discussed. as the evidence mention the cost of R43559,40 and the assessment sheet says R 60000• PP has not considered any residual value at the end of project life time; kindly justify how it meets the requirement of Para 4 of EB-62, Annex 5, and ver. 5.• Whether Year / period mentioned in the assessment sheet is calendar year or financial year.• As the project is completing in 2014, pp. needs to justify why he has considered Depreciation benefit from 2012.• Electricity price escalation in 2010, 2011 and 2012 was 24.8%, 25.8% and 16% respectively. Looking in to increasing trend why PP has not considered any escalation in tariff. PP has only considered escalation of 4.5%, which is inflation not escalation. <ul style="list-style-type: none">• PP needs to justify, how PLF considered meets the EB-48, Annex 11 guideline.• How the PP has considered only 50% electricity sale in 2014. As per the Indicative project implementation plan (doc: 20120803_FModel_02_commissioning date) indicative commissioning date is 04/05/2014, kindly justify.• Why PP has considered capital outflow in 2012 & 2013 only, when the project is going to be implemented in 5 years 2 months.• Why PP has considered change in working capital in IRR calculation, when there is gap of only 15 days in working capital cycle, which can be settled of from the next month.• Tariff considered by PP in Input sheet and CDM financial analysis is different. Kindly clarify.• Although PP has considered working for half year in 2014,	
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		<p>why Expenses are considered for full year.</p> <ul style="list-style-type: none"> • PP has considered nominal value (all the expenses) by giving effect of inflation rate and then converting it to the real value, kindly clarifies the thought behind this. • The value for the electrical costs as reflected in Doc 4, based on “20120803_FModel_05_electricalcosts”, as part of the bill of quantities, is “1 609 000” as of November 2010, hence value needs not be adjusted for purposes of inflation. • Regarding the costs for the “Step up transformers” in Doc 5, the input-value needs to be updated in order to reflect the cost-estimate of 1 200 000, based on a quote from Powertech (“20120803_FModel_10_stepuptransformer”) in writing as of 08 May 2012, instead of an earlier telephonic estimate of R 880 000. • A CAR has been raised regarding the consistency of the applied 10% contingency, i.e., the 10% has not been applied in a consistent manner: either of the initial input value or of the final value translated back to 2010 figures. • The value for the developers fee as reflected in Doc 6, based on the letter from the developer (“20120803_FModel_12_developersfee”), is “6 600 000” as per December 2010, hence need not be adjusted for purposes of inflation. • Excel doc “2012-03-12 Financial model”, sheet “CDM financial analysis”: depreciation should only start in the year 2014, being the year in which the asset is being brought into use Capital Allowances on the Bethlehem Hydro – Werksmans (1st September 2010) (“20120803_FModel_29_depreciation”) as opposed to the year 2012 being the year of purchase. • Kindly justify how the project will be funded, because one side PP has considered Debt arrangement fees in Capex, but no interest is considered in IRR calculation. • Kindly justify how Income Tax benefits / tax shield is considered in IRR calculation. • Kindly explain the Structure of Investment. 		
<p>B.4. Description of the sources and gases included in the project boundary and proof that the CPA is located within the geographical boundary of the registered PoA</p>				
<p>B.4.1. Does the CPA boundary include the physical and geographical location where the programme activities take</p>	<p>/01/, /B04/</p>	<p>Depending on the closure of CAR 5, however it is evident that the geographical coordinates of the CPA are located within the boundary of the PoA.</p>	<p>Refer CAR 5</p>	<p>OK</p>

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	place?				
B.4.2.	Is there any proof that the CPA is located within the geographical boundary of the registered PoA?	/01/, /B04/	Yes, as per physical site-visit, interview with project participant and local stakeholders, web search, the physical location where the CPA will be implemented has been verified by the DOE.	OK	OK
B.4.3.	Are all sources and gases within the boundary considered in a clear manner?	/01/, /B04/	Yes, the sources and gases within the boundary have been considered in a clear manner and in accordance with the applied methodology i.e. AMS-I.D. (Version 17.0).	OK	OK
B.4.4.	Does the spatial and technological boundaries as verified on-site comply with the discussion provided by / indication included to the PoA-DD or CPA-DD?	/01/, /B04/	Yes, the spatial and technological boundaries as verified on-site comply with the discussion provided in the PoA-DD or CPA-DD.	OK	OK
B.5. Emission reductions:					
B.5.1. Data and parameters that is available at validation (B.5.1.):					
B.5.1.1.	Are the equations, including fixed parametric values, to be used for calculation of emission reductions of a CDM-CPA, completely presented?	/01/,/03/, /B04/	<p>The ex-ante parameters as described in Section B.5.1. of the Specific CPA have not been properly justified. Hence a CL has been raised.</p> <p>CL 11: It has not been explained/supported with evidence how the parameter $EG_{P,J,y}$ (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) has been estimated.</p> <p>Assumptions made regarding the calculation of the parameter $EF_{grid,CM,y}$ have not been justified with supporting evidence, i.e. data regarding fuel consumption and electricity generation when determining the OM and the BM.</p>	CL11	OK
B.5.1.2.	Is the list of parameters presented in chapter B.5.1 considered to be complete with regard to the requirements of the applied methodology?	/01/, /B04/	Yes, the list of parameters to be available at time of validation is considered to be complete.	OK	OK

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B.5.2. Ex-ante calculation of emission reductions (B.5.2.):				
B.5.2.1. Are the GHG calculations documented in a complete and transparent manner?	/01/, /B04/	Yes, GHG calculations are documented in a complete and transparent manner in B.5.2 of the Specific CPA-DD and the CPA-DD.	OK	OK
B.5.2.2. Is the data provided in this section consistent with data as presented in other chapters of the PoA-DD or CPA-DD?	/01/, /B04/	Yes, the data provided in Section B.5.2. of the Specific CPA-DD is consistent with data as presented in Section E.6.2. of the PoA-DD and Section B.5.2. of the CPA-DD.	OK	OK
B.5.3. Summary of the ex-ante estimation of emission reductions (B 5.3)				
B.5.3.1. Will the programme activity result in lesser GHG emissions than the baseline scenario?	/01/, /B04/	Yes, for hydro power plants making use of existing reservoirs and no expansion of such, project emissions are estimated to be zero, opposed to the baseline scenario which is carbon intensive.	OK	OK
B.5.3.2. Is the form/table required for the indication of projected emission reductions correctly applied?	/01/, /B04/	Yes, the template is correctly applied for the projected emission reduction for both the Specific CPA-DD and the CPA-DD.	OK	OK
B.5.3.3. Do these values comply with small-scale criteria for every year?	/01/, /B04/	As the project activity is a type (i)-project, hence with a maximum installed capacity of 15 MW, this checklist-question is not applicable.	N/A	
B.5.3.4. Is the projection in line with the envisioned time schedule for the programme's implementation and the indicated crediting period?	/01/, /B04/	Yes, the projection is in line with the envisioned time schedule for the programme's implementation and the indicated crediting period, as indicated in the Specific CPA-DD.	OK	OK
B.5.3.5. Is the data provided in this section in consistency with data as presented in other chapters of the PoA- or CPA-DD?	/01/, /B04/	Yes, the data provided in this section is consistent with data as presented in other chapters of the PoA-DD or CPA-DD.	OK	OK
B.6. Application of the monitoring methodology and description of the monitoring plan				
B.6.1. Description of the monitoring plan for the CDM-CPA				
B.6.1.1. Is the operational and management structure clearly described and in compliance with the envisioned situation?	/01/, /B02/, /B04/	No, the operational and management structure has not been clearly described in the Section B.6.1 of both the Specific CPA-DD and in the CPA-DD or in Section E.7.2. of the PoA-DD. CL 12: In Section B.6.1 of the Specific CPA-DD and the CPA-DD and in	CL-12	OK

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		Section E.7.2. of the PoA-DD, the operational and management structure of the monitoring plan have not been described clearly.		
B.6.1.2. Are responsibilities and institutional arrangements for data collection and archiving clearly provided?	/01/, /B02/, /B04/	Depends on the closure of CL 12 in section B.6.1.1 above.	Refer CL 12	OK
B.6.1.3. Does the monitoring plan provide current good monitoring practice?	/01/, /B02/, /B04/	Depends on the closure of CL 12 in section B.6.1.1 above.	Refer CL 12	OK
B.6.1.4. If applicable: Does annex 4 provide useful information enabling a better understanding of the envisioned monitoring provisions?	/01/, /B02/, /B04/	NA	OK	OK
B.6.1.5. Is the list of parameters presented in chapter B.6.1 considered to be complete with regard to the requirements of the applied methodology?	/01/, /B02/, /B04/	<p>The list of parameters to be monitored by the CPA as presented in Section B.6.1. of the Specific CPA-DD has been considered to be complete.</p> <p>As the CPA is using an existing reservoir, additional parameters according to ACM0002 are not applicable.</p> <p>Auxiliary electricity consumption is not applicable; however during the site-visit it became clear that auxiliary equipment is present. The fuel-consumption thereof is neglected, but this has not been described/justified in the Specific CPA-DD. Hence a CL has been raised.</p> <p>CL 13: In the section B.6.1 of the Specific CPA-DD the fact that fuel-consumption by auxiliary equipment has been neglected, has not been described and/or justified.</p>	CL 13	OK

C. ENVIRONMENTAL ANALYSIS

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

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C.1.1.	Is it defined whether the environmental analysis takes place at PoA or CPA level?	/01/, /B04/	Yes, it has been defined that the Environmental Analysis takes place at CPA level.	OK	OK
C.1.2.	Is the choice whether the environmental analysis takes place at PoA or CPA level justified?	/01/, /B04/	Yes, the choice for undertaking the Environmental Analysis at CPA-level has been justified.	OK	OK
C.2. Documentation on the analysis of the environmental impacts, including trans-boundary impacts					
C.2.1.	Have negative environmental impacts associated with the project activity been identified?	/01/, /B04/, /13/, /14/	Based on supporting evidence several negative impacts have been identified.	OK	OK
C.2.2.	In case negative environmental impacts associated with the project activity have been identified, have these found to be significant and if so, which mitigation actions have been introduced in order to reduce the negative impacts?	/01/, /B04/, /13/, /14/	None of the negative impacts associated with the project activity, have been found to be significant. This is illustrated by the fact that the project was given Environmental Authorisation by the relevant authority.	Refer CL-5	OK
C.3. Please state whether in accordance with the host party laws/regulations, an environmental impact assessment is required for a typical CPA level, included in the PoA.					
C.3.1.	Is an Environmental Impact Assessment required, according to applicable laws/regulations of the (expected) Host Country/ies?	/01/, /B04/, /14/	Yes, as per South Africa's National Environmental Management Act, 1998 a Basic Assessment is required.	OK	OK
D. STAKEHOLDERS' COMMENTS					
D.1. Please indicate the level at which local stakeholder comments are invited. Justify the choice:					
D.1.1.	Is there a clear statement whether the stakeholder comments were invited at PoA or CPA level?	/01/	Yes, stakeholders have been invited at CPA-level, which has been justified in Section D.1. of the Specific CPA-DD.	OK	OK

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		The stakeholder consultation was carried out as part of the Basic Assessment. As during this process stakeholders had not been briefed on CDM, at a later stage the registered I&AP have been send a letter informing them about CDM and the intention for the CPA to be registered as a CDM-project activity, including the financial benefits of such.			
D.1.2.	Have the stakeholders been briefed on the intention to register the project as a CDM project activity?	/01/, /B04/	The stakeholder consultation was carried out as part of the Basic Assessment. As during this process stakeholders had not been briefed on CDM, at a later stage the registered I&AP have been send a letter informing them about CDM and the intention for the CPA to be registered as a CDM-project activity, including the financial benefits of such.	OK	OK
E. ANNEXES 1 – 4					
E.1. Annex 1: Contact Information					
E.1.1.	Is the information provided consistent with the one given under section A.3?	/01/	<p>Yes, the information provided in Annex 1 of the Specific CPA-DD is consistent with the information provided in Section A.3. of the Specific CPA. However it is not consistent with the information provided in Section A.3. of the PoA-DD. Hence a CAR has been raised.</p> <p>Refer CAR 1</p> <p>Section A.3. of the CPA-DD suggests that NuPlanet Project Development (Pty) Ltd will be responsible for all potential small-scale CPAs to be implemented under the PoA. Hence a CL has been raised.</p> <p>CL 14: As stated in Section A.3. of the Generic CPA-DD, clarify whether NuPlanet Project Development (Pty) Ltd will be responsible for all potential small-scale CPAs to be implemented under the PoA and must thus be considered as being the CPA-implementer for all future projects.</p>	Refer CAR 1 & CL 14	OK
E.1.2.	Is the information on all private participants and directly involved Parties presented?	/01/	Yes, information has been presented.	OK	OK

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E.2. Annex 2: Information regarding public funding					
E.2.1.	Is the information provided on the inclusion of public funding (if any) in consistency with the actual situation presented by the project participants?	/01/	N/A as no public funding was used in the development of the CPA.	OK	OK
E.2.2.	If necessary: Is an affirmation available that any such funding from Annex-I-countries does not result in a diversion of ODA?	/01/	Refer section E.2.1. above	N/A	OK
E.3. Annex 3: Baseline information					
E.3.1.	If additional background information on baseline data is provided: Is this information consistent with data presented by other sections of the PoA- or CPA-DD?	/01/ /B02/	As stated in Section A.4.2. of the PoA-DD, all CPAs must satisfy the applicability criteria as laid down by the latest applicable and approved version of the small-scale methodology AMS-I.D. As per AMS-I.D. the emission factor can be calculated according to the procedures prescribed in the "Tool to calculate the Emission Factor for an electricity system". Hence Annex 3 of the Specific CPA demonstrates how the emission factor has been calculated, consistent with information provided in the PoA-DD and the CPA-DD and elsewhere in the Specific CPA-DD.	OK	OK
E.3.2.	Is the data provided verifiable? Has sufficient evidence been provided to the validation team?	/01/, /B02/	As mentioned in section B.5.1.1. insufficient data has been provided to verify the calculations of the OM and the BM as demonstrated in Annex 3 of the Specific CPA-DD. Hence refer CL 11	Refer CL 11	OK
E.3.3.	Does the additional information substantiate / support statements given in other sections of the PoA- or CPA-DD?	/01/, /B02/	Yes, the additional information demonstrates how the value for the Combined margin CO ₂ emission factor, $EF_{grid,CM,y}$, as stated in Section B.5.1. of the Specific CPA, has been determined.	OK	OK
E.4. Annex 4: Monitoring information					

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E.4.1.	If additional background information on monitoring is provided: Is this information consistent with data presented in other sections of the PoA- or CPA-DD?	/01/, /B02/	N/A as no additional background information on monitoring has been provided.	NA	
E.4.2.	Is the information provided verifiable? Has sufficient evidence been provided to the validation team?	/01/, /B02/	Refer section E.4.1. above.	NA	
E.4.3.	Do the additional information and / or documented procedures substantiate / support statements given in other sections of the PoA- or CPA-DD?	/01/, /B02/	Refer section E.4.1. above.	NA	

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Table 2: Resolution of Corrective Action and Clarification Requests

Clarifications and corrective action re-quests by validation team	Ref. to table 1	Summary of programme activity implementer's response	Validation team Conclusion
CORRECTIVE ACTION REQUESTS			
CAR 1: Letter of Approval (LoA) from the Host Country (Republic of South Africa) has not been provided to DOE for Validation.	A.1.1. A.3.2. A.4.1.4. E.1.1.	The LoA has been received from the South African DNA and been provided to the DoE.	DNA approval from host country (RSA) dated 19/09/2012 has been provided for validation. CAR closed
CAR 2: The dates provided in Sections A.1 and A.4.2.1. of the Specific CPA-DD are not presented as per the standard format; i.e. DD/MM/YYYY.	A.1.2. A.1.3. A.2.3.	Text has been changed to reflect the correct date in the standard format.	Dates is corrected as dd/mm/yyyy format in sec. A.1 and A.4.2.1 of the revised CPA-DD CAR Closed.
CAR 3: Description of CPA under Section A.2 of the Specific CPA-DD does not provide information on: <ul style="list-style-type: none"> the purpose of the CPA how the CPA reduces GHG emissions scenario prior to the project activity implementation schedule for the CPA 	A.2.1. A.2.2. A.2.4. A.2.5. A.2.6.	Text has been added to Section A.2 to address the issues raised clearly.	Correction made in revised CPA-DD in sec. A.2 to include purpose of CPA, pre project scenario, implementation schedule and GHG emission reduction by implementing the proposed CPA. CAR Closed
CAR 4 In Sections A.3. of CPA-DD, it has not been explicitly described whether the entity that is responsible for the small-scale CPA can be referred to as the CPA implementer.	A.3.1. A.3.3.	The text has been changed to reflect that the entity responsible for the small-scale CPA is Stortemelk Hydro (Pty) Ltd – which can be referred to as the CPA implementer.	Name of CPA implementer now been included in sec. A.3 of the revised CPA-DD. CAR Closed.

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CAR 5 Section A.4.1.2. of the Specific CPA-DD is exceeding the maximum of one page.	A.4.1.2. A.4.1.3. B.4.1.	Agreed this section has been changed so it does not exceed 1 Page.	Section A.4.1.2 of revised CPA-DD is now in compliance with CPA-DD filling guidelines. CAR Closed
CAR 6: In Section B.1. of both the CPA-DD and the Specific CPA-DD is not being referred to the correct PoA to which this small-scale CPA is added.	B.1.1.	Text in Section B.1 changed to reflect the correct PoA name i.e. NuPlanet Small Scale Hydropower PoA.	Name of POA, to which proposed CPA will be added is now correctly mentioned in section B.1 of the revised CPA-DD CAR Closed
CAR 7: In Section B.2. of the Specific CPA-DD it is not demonstrated that the CPA is meeting all the criteria as laid down by the applied methodology AMS-I.D. (Version 17.0)	B.2.6.	A table has been included in Section B.2 clearly detailing how the CPA meets all the criteria as laid down by the applied methodology (AMS I.D, version 17.0)	Section B.2 of revised CPA-DD, includes all applicability criteria of applied meth and justification provided that how CPA meets all applicability criteria. CAR Closed
CLARIFICATION REQUEST			
CL 1: It is not clear to which document the date, i.e. the SSC-PoA-DD or the Specific CPA-DD, provided in Table 1 as presented in Section A.1. of the Specific CPA-DD, does apply.	A.1.2.	A statement is made in sections A.1 of both the SSC-PoA-DD and the Specific CPA-DD as to what version the document is for the purposes of clarity.	Correction made in section A.1 of revised CPA-DD is found to be appropriate. CL Closed
CL 2: The description of the small-scale CPA in Section A.2 of the Specific CPA-DD does not allow the reader to establish clearly whether the project activity involves a greenfield-site, retrofitting or involves replacement of an existing hydroelectric power installation at the site.	A.2.1.	This CPA is a Greenfield- site and the text in the Specific CPA-DD has been changed to reflect this. This was also confirmed by the onsite validation visit.	Description provided in sec. A.2 of the revised CPA-DD indicates that proposed CPA-DD is greenfield project and it was also confirmed by on site visit by

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			validation team. CL Closed
CL 3: Supporting documentation is requested from the project participants to substantiate the operational lifetime of the CPA as stated in Section A.4.2.2. of the Specific CPA-DD.	A.4.2.3.	The operational lifetime of the CPA has been changed to 20 years, which is longer than the crediting period chosen. Please see letter from equipment supplier. Document reference: 2012-09-14_CL8_CPOperationalifetime	The operational life time of the proposed CPA confirmed with letter provided by technology supplier (ANDRITZ HYDRO GmbH) dated 07/09/2012. CL Closed
CL 4: It has to be substantiated with appropriate evidence that “NuPlanet Small Scale Hydropower PoA – CPA1 Stortemelk” is not registered as an individual CDM project activity nor that it is part of another registered PoA.	A.4.6.1.	A search of the CDM UNFCCC website on the 19 th July 2012 with regard to projects registered in South Africa clearly shows that there is no hydropower project registered in the name of Stortemelk Hydro (Pty) Ltd. The only hydro project registered in South Africa on the 19 th is the Bethlehem Hydro project (2692). This project consists of two sites: Merino – on the As River (the same river as the CPA is on) , some 15 km outside Bethlehem in the direction of the town of Clarens (28°22'09" South, 28°21'42" East); and, Sol Plaatje – located on the Sol Plaatje Dam which is 5km from the centre of the town of Bethlehem (28°12'59" South, 28°21'50"East). Both the locations are different from the co-ordinates of the proposed CPA. A search for registered PoA's in South Africa on the 19 th July revealed no registered PoAs in South Africa that could include a hydropower project as envisaged with regard to this CPA. The only registered South Africa PoA at this time was the SASSA Low Pressure Solar Water	Justification provided by PP and supporting documents available in public domain suggests that proposed CPA, “NuPlanet Small Scale Hydropower PoA – CPA1 Stortemelk” is not registered as an individual CDM project activity nor it is part of any another registered PoA. CL closed

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		<p>Heater Programme (4302).</p> <p>This evidence substantiates the fact that the project has not been registered as an individual CDP project activity nor that it is part of another registered PoA.</p> <p>The two document references are: 2012-08-21_CL4_CPACDMproject search 2012-08-21_CL4_CPAPoAsearch</p>	
<p>CL 5: Further clarification is being requested on how this CPA and the development of the other hydropower station on the same river can be uniquely identified and if so, how this is done.</p>	A.4.6.2.	<p>The unique identification of this CPA has been done through an analysis of the following:</p> <ul style="list-style-type: none"> • the description of the project; • the geographical co-ordinates of the project; and, • the site visit done by one of the validation team members to the proposed CPA's location. <p>Please also see the response below to CL 7 with regard to issue of consistency of geographical co-ordinates for further detail.</p>	<p>Justification provided in CPA-DD and on site visit by validation team and by confirming the geo-coordinates of the proposed CPA, it can be concluded that, that location of proposed CPA is unique.</p> <p>CL closed</p>
<p>CL 6: In the table in Section B.2. of both the Specific CPA-DD and the CPA-DD is incorrectly being referred to Section A.4.1. of the same documents respectively, i.e. the geographical coordinates.</p>	B.2.3.	<p>Agreed. The section should be A.4.1.2. This has been corrected in the text</p>	<p>Correction made in revised CPA-DD is found to be correct.</p> <p>CL closed</p>
<p>CL 7: Regarding the geographical coordinates of the CPA, consistency must be established between Section A.4.1.2. of the Specific CPA and supporting documentation.</p>	B.2.3.	<p>There are inconsistencies with regard to the geographical co-ordinates of the CPA in section A.4.1 and the supporting documentation. This is a function of different process involved (and the different people involved with these processes) and what element you consider the "centre" of the CPA over the project's footprint of 4000m².</p>	<p>Geographical coordinates of the proposed CPA is now corrected in revised CPA-DD as per Environment Impact Assessment Report and Environment Authorization.</p>

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		<p>For example the water use license co-ordinates are in the centre of the watercourse and the EIA related co-ordinates related to where actual structures are to be located. Please see document reference "2012-08-21_CL7_CPACoordinates" that shows the differences between the different points taken.</p> <p>To ensure consistency the CPA implementer has chosen the activity position as given on page 5 of the Basic Assessment report, which the Environmental Authorisation is based on. These coordinates are:</p> <p>Latitude 28°25' 50.2"S Longitude 28°23' 04.9"E</p> <p>Section A.4.1.2 of the CPA-DD has been modified to reflect this.</p>	CL Closed
<p>CL 8: It has not been clearly described in both the Specific CPA-DD and the CPA-DD how the criterion 14. (c) of the "Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Programme of Activities" (Version 01.0), is being met.</p>	B.2.4.	<p>The eligibility criterion has been rewritten as follows to show clearly how criterion 14 (c) is being met i.e. "Each CPA will use hydroelectricity renewable energy generation technology only. The technology will satisfy all relevant national testing and certification requirements. This will be shown through a review of the feasibility study related reports that describe the technology to be used."</p> <p>It therefore now includes a provision that feasibility related documentation must be used to show that hydropower related technology is being used.</p>	<p>Correction made in revised CPA –DD corresponding to fulfilment of criterion 14 (c) of the "Standard for demonstration of additionality" is found to be appropriate.</p> <p>CL Closed</p>
<p>CL 9: Target group(s) and distribution mechanism(s) have not been defined in the PoA nor CPAs neither has it been justified that these are not applicable.</p>	B.2.10.	<p>An additional eligibility criterion has been added specifying targets groups. Distribution mechanisms are not applicable here as CPAs will be grid connected and will therefore feed into the grid's transmission system.</p>	<p>Correction confirmed with revised CPA-DD.</p> <p>CL Closed</p>
<p>CL 10: It is not clear why criterion (k) as per paragraph 14 of</p>	B.2.12.	<p>An additional eligibility criteria (number 13) has been</p>	<p>An undertaking from CPA implementer dated 15/08/2012</p>

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<p>the “Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Programme of Activities (Version 01.0)” is not applicable due to the nature of the CPAs included in this PoA.</p>		<p>added to the PoA-DD as follows: “13. The CPA implementer will provide a declaration that the CPA in aggregate meets the small-scale or microscale threshold criteria and will remain within these thresholds throughout the crediting period of the CPA”. This to ensure that criterion k is satisfied.</p> <p>For this CPA 1 such a declaration has been furnished by the CPA implementer. Please see document reference 2012-08-21_CL10_CPAsscthresholddeclaration.</p>	<p>provided for validation which asserts that CPA in aggregate meets the small scale threshold criteria and will remain with these thresholds throughout the crediting period of CPA.</p> <p>CL Closed</p>
<p>CL 11: It has not been explained/supported with evidence how the parameter $EG_{PJ, y}$ (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) has been estimated.</p> <p>Assumptions made regarding the calculation of the parameter $EF_{grid, CM, y}$ have not been justified with supporting evidence, i.e. data regarding fuel consumption and electricity generation when determining the OM and the BM.</p>	<p>B.5.1.1. E.3.2.</p>	<p>This parameter has been derived from the generation forecast for the Stortemelk Facility. Please see the document reference 2012-09-04_CL11_Generation Forecast. Also see the document 2012-09-06_CL11_CPAThirdpartyreviewgenforecast that provides a review of the generation forecast.</p> <p>The assumptions with regard to the parameter $EF_{grid, CM, y}$ are supported through the content of the following two documents: 2012-08-21_CL11_CPAGefDescription 2012-08-21_CL11_CPAGefexcel sheet</p> <p>Please note that the content of Annex 3 has been modified to reflect the revised content of these documents, which has resulted in a new value for the emission factor. This has led to revised estimates for the emission reductions associated with the project.</p>	<p>Net electricity generated from the proposed CPA is estimated based on third party contracted by PP and in compliance with Annex. 11 of EB 48</p> <p>Calculation of Grid emission factor verified with excel spread sheet and description on calculation of grid emission factor and found to be correct.</p> <p>CL Closed</p>

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<p>CL 12: In Section B.6.1 of the Specific CPA-DD and the CPA-DD and in Section E.7.2. of the PoA-DD, the operational and management structure of the monitoring plan have not been described clearly.</p>	<p>B.6.1.1. B.6.1.2. B.6.1.3.</p>	<p>Text has now been added clearly to the sections identified describing the operational and management structure of the monitoring plan.</p>	<p>Explanation regarding operational & management structure of the monitoring plan now modified in revised CPA-DD. CL Closed</p>
<p>CL 13: In the section B.6.1 of the Specific CPA-DD the fact that fuel-consumption by auxiliary equipment has been neglected, has not been described and/or justified.</p>	<p>B.6.1.5.</p>	<p>Text has been included in the B.6.1 to address this issue, reflecting the use of the diesel generators on site for back-up and emergency purposes only.</p>	<p>Diesel generators will be used for back up and emergency purposes only which was confirmed with statement in section B.6.1 of the revised CPA-DD and fuel consumption also included under parameter to be monitored in revised CPA-DD. CL Closed</p>
<p>CL 14: As stated in Section A.3. of the Generic CPA-DD, clarify whether NuPlanet Project Development (Pty) Ltd will be responsible for all potential small-scale CPAs to be implemented under the PoA and must thus be considered as being the CPA-implementer for all future projects.</p>	<p>E.1.1.</p>	<p>A.3 of the generic CPA-DD has been changed to allow for CPA implementers other than NuPlanet Project Development (Pty) Ltd developing CPAs and participating in this PoA.</p>	<p>Correction made in revised CPA-DD is accepted by validation team. CL Closed</p>
<p>CL 15: 1. Decision making document does not say that the CDM was a decisive factor for the project.</p>		<p>1. Just to confirm that the decision to proceed with the project has not yet been taken and that the project has not started yet, in accordance with the CDM rules. In terms of prior consideration of the CDM, this does not apply to POAs.</p>	<p>1. As project start date has not been fixed yet, justification provided is accepted. However Board resolution dated 29/11/2010 has been provided for validation which indicates that based on Technical feasibility report prepared by Aurecon, PP</p>

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<p>2. PP took decision for the project in November 2010, kindly justify, how the input parameters considered meets the requirement of para 6 of EB-62, Annex 5, Ver 5.</p> <p>3. Key input parameters are not included in CPA-DD; kindly include all the key parameters in PDD.</p> <p>4. Amount in file named "20120803_FModel_03_billofquantities" for bill of quantity is 2287000 (unit is not known); while in financial assessment</p>		<p>2. The decision that was made to date, to submit the application to South Africa's REIPPPP (Renewable Energy Independent Power Producer Procurement Programme), was based on the figures in this financial model. The final investment decision has not been made yet. That final investment decision will only be made on financial close.</p> <p>With regard to the letter previously submitted to Carbon Check - It does not constitute approval to start construction (real action as defined in the context of CDM projects start dates). The preliminary expenditure was only for design and further feasibility related work.</p> <p>3. Response 1: This has been done in section B.3 of the CPA-DD.</p> <p>Response 2: Additional input parameters have been added to the CPA-DD as required.</p> <p>4. Response 1: The supporting document for the civil construction figure</p>	<p>decided to proceed for next phase of the project</p> <p>2. Project is under South Africa's REIPPPP (Renewable Energy Independent Power Producer Procurement Programme) and PPA with ESKOM, has not been signed yet and financial closure has not been achieved yet.</p> <p>Investment decision will be made after financial closure and expected project started date is in May, 2013 as per implementation schedule provide by PP. Hence justification provided by PP is accepted to validation team</p> <p>3. Review 1: All input parameters have not been included in CPA-DD 2ND Review All relevant parameters has been included in revised CPA-DD and found to be correct by validation team</p> <p>4. 1st Review Still some key input parameters</p>
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<p>sheet it is R 38177810. Kindly give the reason for same. PP has submitted breakup for Section A only. Kindly provide the breakup of section B, C, D, E and F also.</p> <p>5. Cost of accountants doc 13 needs to be discussed. as the evidence mention the cost of R43559,40 and the assessment sheet says R 60000</p>		<p>of R38 177 810 is 20120803_FModel_04_civilconstruction. We have now reviewed the supporting schedule for civil construction called Doc 3, and updated the sum total in cells c9 and d9. The amount of R38 177 810 is therefore updated to be R44 557 810. Just to explain again how this figure is derived at:</p> <ul style="list-style-type: none"> • Preliminary and general R7 867 000 Summary on page 12 of bill of quantities • Site clearance R11 716 965 Summary on page 12 of bill of quantities • Power station R12 505 140 Summary on page 12 of bill of quantities • Penstock R2 617 995 Summary on page 12 of bill of quantities • Mechanical powerhouse R5 800 000 <p>R33 044 000 minus R26 460 000 minus R784 000 on. Summary on page 11 of bill of quantities</p> <p>Response 2:</p> <ol style="list-style-type: none"> 1. The costs for civil construction are 2010 amounts. The multiplying and dividing of 0.83 have been removed from sheet Doc3. 2. Submitted Doc 3 to DOE <p>Response 3: DOC 3 is and the effect of inflation is removed now.</p> <p>5. Response 1: We have updated cell D60 on Inputs sheet of financial model with the amount of R43 559.40. This 2012 amount has been translated to a 2010 figure. The amount of R43 559,40 is the actual accounting amount for a similar project Bethlehem Hydro. The R60 000 that was originally used, was based on an assumption.</p>	<p>like power generation, salvage value are missing in CPA-DD.</p> <p>2nd Review: PP has now included all the input parameters in CPA-DD, hence acceptable.</p> <p>Revision of cost is OK. Kindly clarify Why Civil cost is divided and multiplied by a factor 0.83.</p> <p>2nd Review: Kindly submit the revised Doc 3. PP should submit all the documents/ Excel sheets, which are modified.</p> <p>3rd Review: PP has submitted the revised Doc 3 and removed the effect of inflation hence accepted.</p> <p>5. OK, R43 559,40 is divided by 0.91 and multiplied by 0.83, kindly provide the clarification for same.</p> <p>2nd Review: Cost is OK, but remove the hard coding in cell. Further, refer the</p>
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<p>6. PP has not considered any residual value at the end of project life time; kindly justify how it meets the requirement of Para 4 of EB-62, Annex 5, and ver. 5.</p>		<p>Response 2: 1. The accounting fee of R43 559.40 is 2012 figures. This figure has been translated from a 2012 figure into a 2010 figure by dividing by 0.91 and multiplying by 0.83</p> <p>2. Hard coding has been removed in cell D60 of Inputs sheet, and linked to relevant inflation indexes</p> <p>Response 3: Hard coding from cell C 60 is removed now and the values are linked with inflation index.</p> <p>6. Response 1: We expect that after 20 years, the cost of removing the equipment from site (as per the requirement in the PPA that the site be restored to its original state); will exceed its value in the second hand market. The value at the end of life is therefore negative. This value has been taken as nil, in order to be conservative.</p> <p>Response 2: Cell D36 of the Inputs sheet of the financial calculation has been updated.</p> <p>A value of 10% of the original capital cost has been used for the salvage value. This is based on international best practice, as reflected in regulations from India which deal with the terms and conditions for determination of tariff from renewable energy sources.</p> <p>Document References: 20121016_FModel_HaryanaREtariffregs 20121016_FModel_CERRenewable energy tariffs regs</p>	<p>comment of excel sheet also.</p> <p>3rd Review: PP has removed hard coding from cell D60 and linked the values with inflation indexes hence accepted.</p> <p>6. PP has referred PPA which says that, " site will be restored to its original value". DoE is of the opinion that after completion of 20 years period as per PPA, Turbines, electrical line, other plant & machinery, OHP cranes etc. will have some value and can not be considered as scrap, hence some residual value need to be considered as per relevant standard practice in industry or any relevant host country guidelines.</p> <p>2nd Validation: PP has now considered a salvage value of 10%, which is acceptable as international best practices. The document provided by PP confirms that, while declaring hydro tariff, regulatory authorities has considered salvage value of 10% as a practice. Hence salvage</p>
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<p>7. Whether Year / period mentioned in the assessment sheet is calendar year or financial year.</p> <p>8. As the project is completing in 2014, pp. needs to justify why he has considered Depreciation benefit from 2012.</p> <p>9. Electricity price escalation in 2010, 2011 and 2012 was 24.8%, 25.8% and 16% respectively. Looking in to increasing trend why PP has not considered any escalation in tariff. PP has only considered escalation of 4.5%, which is inflation not escalation.</p> <p>10. PP needs to justify, how PLF considered meets the EB-48, Annex 11 guideline.</p>		<p>7. The period in the assessment sheet is calendar year.</p> <p>8. Agreed and have updated rows 27 to 32 and rows 49 to 53 of the financial model to reflect this. Depreciation is updated to be calculated from 2014</p> <p>9. Response 1: ESKOM's Integrated Report (2011) on page 79 confirms that inflation should be used for future escalation. Refer to supporting document 20120822_Fmodel_34_inflationaryincrease</p> <p>Response 2: Line 11 on Page 79 of ESKOM's integrated report (reference 20120822_Fmodel_34_inflationaryincrease) quotes "... before moving to an inflation-related increase". Please also refer to 20120803_FModel_25_futureinflation for support to the estimation of 4.5% inflation.</p> <p>10. Response 1: Please see generation forecast report (supporting document named 20120822_FModel_40_Generation forecast report) and third party opinion (supporting document named 20120822_FModel_42_Third party confirm) with regard to the forecast of production. We have updated the financial model to use the actual production forecast, instead of the plant load factor.</p> <p>Response 2: The financial model has been updated to use the generation forecast from the external experts Aurecon.</p>	<p>value of 10% is found reasonable and acceptable.</p> <p>7. OK</p> <p>8. Calculation is updated</p> <p>9. Document does not support the argument of considering Inflation rate as escalation of 4.5%, kindly provide the relevant document.</p> <p>2nd Validation: Line 11 on Page 79 of ESKOM's integrated report (reference 20120822_Fmodel_34_inflationaryincrease) confirms the intention of ESKOM to move towards inflation related tariff increase. Hence acceptable.</p> <p>10. 1st Review: PP is requested to justify how the two documents namely "20120822_FModel_40_Generation forecast report and 20120822_FModel_42_Third party First document is generation forecast report prepared by Mr. Anton Louis Olivier, who is also PP whereas 2nd letter is from Aurecon dt/ 06/09/2012</p>
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<p>11. How the PP has considered only 50% electricity sale in 2014. As per the Indicative project implementation plan (doc: 20120803_FModel_02_commissioning date) indicative commissioning date is 04/05/2014, kindly justify.</p> <p>12. Why PP has considered capital outflow in 2012 & 2013 only, when the project is going to be implemented in 5 years 2 months.</p>	<p>Please refer to lines 383 to 402 of the Inputs sheet of the financial calculation for the updated generation forecast. These amounts are also calculated in the supporting document number 20121011_FModel_44_Generation Forecast.</p> <p>Please refer to page 50 section 4.9 for the generation forecast as developed by Aurecon. As per the guidance of Annex 11, EB 48 the forecast would qualify as being done by a third party contracted by the project participants.</p> <p>11. Agreed. Cell D356 of the Inputs sheet has been updated to reflect the expected commissioning date of 04/05/2014. The expected electricity sale for the year of 2014 is updated to 66%</p> <p>12. Response 1: Agreed. The capital expenditure have been spread out according the time frame indicated in the project plan. Civil construction is spread/ phased from 17/07/2012 – 09/03/2014 Electrical and mechanical is spread from 13/06/2012 – 04/05/2014 Other contracts and other capital cost items are spread the same as civil construction from 17/07/2012 – 09/03/2014</p> <p>Response 2:</p>	<p>confirming the generation forecast report prepared by PP. The above two documents still do not comply with para 3 (a) & (b) of Anne. 11, EB 48.</p> <p>2nd Review : Page 40 of “Stortemelk Technical Feasibility Report – Botterkloof” confirms the power generation from project. Power generation considered by PP is from a contracted third party engineering company, which confirms the compliance of para 3 (b) of Anne. 11, EB 48, hence acceptable.</p> <p>11. Calculation in Cell D 356 is updated now, hence acceptable.</p> <p>12. PP has divided the cost in following pattern; kindly provide the basis for same.</p> <table border="1" data-bbox="1720 1077 2128 1257"> <thead> <tr> <th>Year-2</th> <th>Year-1</th> <th>Year1</th> </tr> </thead> <tbody> <tr> <td>28%</td> <td>61%</td> <td>11%</td> </tr> <tr> <td>29%</td> <td>53%</td> <td>17%</td> </tr> <tr> <td>28%</td> <td>61%</td> <td>11%</td> </tr> <tr> <td>28%</td> <td>61%</td> <td>11%</td> </tr> </tbody> </table> <p>2nd Review: PP has now submitted the calculation of phasing of</p>	Year-2	Year-1	Year1	28%	61%	11%	29%	53%	17%	28%	61%	11%	28%	61%	11%
Year-2	Year-1	Year1															
28%	61%	11%															
29%	53%	17%															
28%	61%	11%															
28%	61%	11%															

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<p>13. Why PP has considered change in working capital in IRR calculation, when there is gap of only 15 days in working capital cycle, which can be settled of from the next month.</p>		<p>The capital expenditure has been spread evenly and phased out over the timeframes mentioned in Response 1.</p> <ul style="list-style-type: none"> • Civil construction is estimated from 17/07/2012 – 09/03/2014 <ul style="list-style-type: none"> - 2012: 167 days - 2013: 365 days - 2014: 68 days - Total days: 600 days • Electrical and mechanical is estimated from 13/06 – 04/05/2014 <ul style="list-style-type: none"> - 2012: 201 days - 2013: 365 days - 2014: 119 days - Total days: 685 days • Other contracts and other capital cost items are estimated the same as civil construction from 17/07/2012 – 09/03/2014 <ul style="list-style-type: none"> - 2012: 167 days - 2013: 365 days - 2014: 68 days - Total days: 600 days <p>13. Response 1: By calculating the discounted cash flow financial model, we indicate the possible annual cash flows that will occur for the project. The calculation of the discounted cash flow takes the following principles into account: The basic income statement items (revenue less expenses), plus the movement in the balance sheet items. The balance sheet items are indicated as the capital expenditure, debtors and creditors. The cash flow for a year is therefore the revenue less expenditure, plus the movement in capital, the movement in debtors and the movement in creditors. We updated the financial model to indicate that the electricity sold will be paid within 30 days.</p>	<p>expenditure. Phasing of expenditure in calculation sheet confirms the same, hence acceptable.</p> <p>13. At the end of financial assessment PP has not considered the realizable value of working capital; kindly provide the justification for same.</p> <p>2nd Review: PP has now considered the 100% realization of debtor and provided for 100% creditor liability. The net effect is</p>
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<p>14. Tariff considered by PP in Input sheet and CDM financial analysis is different. Kindly clarify.</p> <p>15. Although PP has considered working for half year in 2014, why Expenses are considered for full year.</p> <p>16. PP has considered nominal value (all the expenses) by giving effect of inflation rate and then converting it to the real value, kindly clarify the thought behind this.</p>		<p>Response 2:</p> <p>We updated cell numbers AB163 and AB193 of the financial model to bring the debtors and creditors books to a total value of nil at the end of the financial assessment. This has an effect on the working capital of a realizable value of R3,363,512 at the end of the financial assessment.</p> <p>14. The tariff in cell D230 of the Inputs sheet is the same as the tariff for 2010 in Cell E156 of the CDM financial analysis sheet. The tariff is escalated for other years according the electricity price increase.</p> <p>15. Agreed. All expenditure in the financial model have been updated to reflect the expected percentage to be taken into consideration</p> <p>16. Response 1: The default benchmark expected return on equity amounts indicated in EB 62 Annex 5, Appendix are indicated in real terms. The financial model is calculated in nominal terms and needed to be converted to real terms in order to be evaluated against the real terms benchmark.</p> <p>Response 2: If the electricity price increase was equal to the rate of inflation in South Africa, we could run the financial model without inflation. Because the electricity price does not increase at inflation rate from the beginning of the financial analysis, and the general approach to simply deduct the inflation rate from the electricity price is inaccurate as it disregards compound growth, we run the model with inflation, and then deflate the final cashflow by</p>	<p>calculated as inflow in the 20th year of calculation, which is conservative hence acceptable.</p> <p>14. Tariff considered is same, hence acceptable.</p> <p>15. Expenses are proportionated as per the operational period, hence acceptable.</p> <p>16. Statement is not clear, PP has multiplied the RSA CPI Index in row no. 124 to 129 of "CDM financial analysis" and again it is divided by RSA CPI Index in row no. 16 and rows no 38. Kindly justify the same.</p> <p>2nd Validation: PP has used rate of 4.5% as escalation (referred as RSA CPI Index) as escalation while calculating the operating cost and same rate is used as inflation while converting the</p>
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<p>17. The value for the electrical costs as reflected in Doc 4, based on “20120803_FModel_05_electricalcosts”, as part of the bill of quantities, is “1 609 000” as of November 2010, hence value needs not be adjusted for purposes of inflation.</p> <p>18. Regarding the costs for the “Step up transformers” in Doc 5, the input-value</p>		<p>using the CPI index in row 147.</p> <p>17. Response 1: Agreed. Cell D4 in Doc 4 Sheet has been amended. The inflationary calculation has been deleted, to reflect the correct 2010 amount. This amount was previously discounted from 2011 to 2010, but the amounts were actually 2010 amounts. No discount is therefore required.</p> <p>Response 2: 1. The commentary in Response 1 only refers to the value in Cell D4 of Doc 4. The amount in Cell D5 has been translated from a 2011 figure to a 2010 figure by dividing by 0.87 and multiplying by 0.83 The Euro_Dollar exchange rate in cell C5 has been updated from 10 to 9.7. Please see supporting document number 20121010_FModel_43_EurosRands for the average exchange rate for the year 2010.</p> <p>2. Doc 4 has been submitted to the DOE 3. PP used the average value of the Rand-Euro exchange rate for the relevant year to account for the variability.</p> <p>Response 3: Please refer the document named “20121010_FModel_43_EurosRands” which refers the Period average of EUR/ZAR from Jan 2010 to December 2010.</p> <p>18. Response 1: Agreed. Amount in cell C6 in Doc 5 is changed to the</p>	<p>nominal cash flow in to real cash flow. Approach used by PP is clarified to DOE, hence it is acceptable.</p> <p>17. Calculation is updated now, hence acceptable. Kindly justify why PP has divided the cost from 0.87 and multiplied it with 0.83. PP has converted Euro in rand with an exchange price of 10; kindly provide the sufficient evidence for same.</p> <p>2nd Review: Kindly submit the revised Doc 4 for verification.</p> <p>3rd Review: PP has submitted the Doc 4. The document called: 20121010_FModel_43_EurosRands” justifies the average exchange rate of 9.7 ZAR, hence acceptable.</p> <p>18. PP has not used a consistent method for calculating cost for “Amount adjusted for</p>
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<p>needs to be updated in order to reflect the cost-estimate of 1 200 000, based on a quote from Powertech (“20120803_FModel_10_stepuptransformer”) in writing as of 08 May 2012, instead of an earlier telephonic estimate of R 880 000.</p>		<p>correct amount of R1 200 000.</p> <p>Response 2: 1. The following method was used to adjust amounts to 2010 figures: - Material: 2012 Amount. Divide by 0.91, multiply by 0.83 - Design and supervision: 2011 Amount. Divide by 0.87, multiply by 0.83 - Step up transformers: 2012 Amount. Divide by 0.91, multiply by 0.83 - Labour and Transport: 2012 Amount. Divided by 0.91, multiply by 0.83 - Operational design review, and construction supervision and commissioning: 2011 Amount. Divide by 0.87, multiply by 0.83</p> <p>Please refer to row 147 of the financial model for the calculated RSA CPI Index for each year.</p> <p>2. Doc 5 has been submitted to the DOE</p>	<p>input in 2010”. In some places values are adjusted as per price index and in some places it’s not. PP should use one method for valuation not separate method.</p> <p>2nd Review: Kindly submit the revised Doc 5 for verification.</p> <p>3rd Review: PP has submitted the Doc 5 and the cost is adjusted to year 2010 by using inflation indexes hence accepted.</p>
<p>19. A CAR has been raised regarding the consistency of the applied 10% contingency, i.e., the 10% has not been applied in a consistent manner: either of the initial input value or of the final value translated back to 2010 figures.</p>		<p>19. Agreed. Cell D10 in sheet Doc 3, Cell D7 in sheet Doc 4, cell D10 in sheet Doc 5 have been amended to be consistent to be applied as 10% of final 2010 values only.</p> <p>The choice of the 10% contingency value is in line with the evidence contained in supporting document number 20120803_FModel_07_contingencyamount</p>	<p>19. It can be closed ones all the cost components are validation.</p>
<p>20. The value for the developers fee as reflected in Doc 6, based on the letter from the developer (“20120803_FModel_12_developersfee”), is “6 600 000” as per December 2010,</p>		<p>20. Response 1: Agreed. Inflationary adjustment in cell D4 in sheet Doc 6 has been removed.</p> <p>Response 2: 1. The following method was used to adjust amounts</p>	<p>20. PP has not used a consistent method for calculating cost for “Amount adjusted for input in 2010”. In some places values are adjusted as per price index and in some places it’s not. PP</p>

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<p>hence need not be adjusted for purposes of inflation.</p> <p>21. Excel doc "2012-03-12 Financial model", sheet "CDM financial analysis": depreciation should only start in the year 2014, being the year in which the asset is being brought into use Capital Allowances</p>		<p>to 2010 figures:</p> <ul style="list-style-type: none"> - Developers fee: 2010 Amount. The multiplying and dividing of 0.83 have been removed. - Architects: 2011 Amount. Divide by 0.87, multiply by 0.83 - Land purchase: 2010 Amount. The multiplying and dividing of 0.83 have been removed. - Owners all risk insurance during construction: As calculated in sheet Doc 7. The sum total amount in column C for Doc 7 was entered into cell C7 of Doc 6. The sum total amount in column D for Doc 7 was entered into cell D7 of Doc 6. - Owners cost during construction: 2010 Amount. The multiplying and dividing of 0.83 have been removed. <p>The cell D27 of the input sheet of the financial calculation has been updated with the sum total amount of R15,522,657 for other capital cost items.</p> <p>Please refer to row 147 of the financial model for the calculated RSA CPI Index for each year.</p> <ol style="list-style-type: none"> 2. Doc 6 has been submitted to the DOE 3. a) Document submitted. b) DOE is correct. This change has already been done in the previous response, document called 2012-10-10 Doc 6. Please see document attached. <p>21. As per the response in point number 10 i.e. agreed and has updated rows 27 to 32 and rows 49 to 53 of the financial model to reflect this. Depreciation is updated to be calculated from 2014</p>	<p>should use one method for valuation not separate method.</p> <p>2nd Review: Kindly submit the revised Doc 6 for verification.</p> <p>3rd Review: PP has submitted the Doc 6. Doc 6.3 does not have date but, kindly submit the total document with date.</p> <p>PP has submitted revised Doc 7, in this workbook PP has adjusted the amount of marine insurance 2011 amounts to the year 2010 by dividing 0.91, but 0.91 factor is for 2012 and not for 2011. Kindly update the Doc 7 along with Doc 6 and resubmit it.</p> <p>3rd Review: PP has submitted the dated land document.</p> <p>Modified document is submitted, hence acceptable.</p> <p>21. Calculation is updated, hence acceptable.</p>
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<p>on the Bethlehem Hydro - Werksmans(1st September 2010) ("20120803_FModel_29_depreciation") as opposed to the year 2012 being the year of purchase.</p> <p>22. Kindly justify how the project will be funded, because one side PP has considered Debt arrangement fees in Capex, but no interest is considered in IRR calculation.</p> <p>23. Kindly justify how Income Tax benefits / tax shield is considered in IRR calculation.</p> <p>24. Kindly explain the Structure of Investment.</p>		<p>22. The input in the financial model has been changed, by omitting the debt arranging fees from the financial model. The project will be funded entirely by the equity investors and therefore no debt arranging fees will be incurred. Please see the supporting documentation named 20120822_FModel_36_Equity investment 1, 20120822_FModel_37_Equity investment 2, 20120822_FModel_38_Equity investment 3 and 20120822_FModel_39_Equity investment 4.</p> <p>23. An assessed tax loss from previous years should be considered when calculating the tax liability for the current year. The principle of offsetting profits in a specific year against an accumulated tax loss is used as stipulated in Section 20 of the Income Tax act 58 of 1962</p> <p>24. Please refer to the document submitted named 20120822_Fmodel_41_Stortemelk structure</p>	<p>22. OK</p> <p>23. OK</p> <p>24. OK</p>
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Table3: Forward Action Requests

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

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APPENDIX B

CERTIFICATE OF COMPETENCE

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Ravi Shankar

is hereby certified as a

Qualified CDM Lead Assessor

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

1.2, 2.1, 2.2, 3.1 & 13.1

Awarded 12 May 2011

A handwritten signature in blue ink, appearing to read "AS", written over a horizontal line.

Chief Executive Officer
Mr Adam Simcock

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