

# VALIDATION REPORT


**Derba MIDROC Cement Pvt Ltd. Co & Ethan Bio-Fuels  
Pvt Ltd Co**

**“Clinker Optimization in Cement types production at  
Derba MIDROC Cement Plant”  
in  
Ethiopia**

**Report N° CCL00072/DMCC/20082012  
Revision N° 01-02**

# VALIDATION REPORT

CDM VALIDATION REPORT NO. CCL00072/DMCC/20082012

<b>Project Title:</b> Clinker Optimization in Cement types production at Derba MIDROC Cement Plant		Country: Ethiopia	<b>Estimated CERs (tCO<sub>2</sub>e):</b> 571,832 annual average
<b>Client/Project Participant:</b> Ethan Bio-Fuels Pvt Ltd Co Bole Road, T.K. Building 2nd Floor Room No.208 Addis Ababa,, Ethiopia Mr .Ambachew. F.Admassie Chairman & CDM Projects Manager		<b>Project Participant:</b> Derba MIDROC Cement Pvt Ltd Co Kale House, Haile Gebre Sellsassie Street Addis Ababa,, Ethiopia Mr. Auto Haile Assegade Executive Director	
<b>Report No.:</b> CCL00072/DMC/20082012	<b>Revision:</b> 402		<b>Date of this report:</b> <del>2015/0614/2012</del> 2013
<b>Technical Reviewer:</b> Mr. Vikash Kumar Singh		<b>Date of approval:</b> 20/12/2012 <del>20/0620/12/2012</del> 2013 (IRCC)	
<b>Approved by (Final Report):</b> Priyesh Ramlall 		<b>Date of approval:</b> 24/12/2012 21/06/2013 (IRCC) <del>05/06/201324/12/2012</del> 2013	
<b>Organisational Unit:</b> Carbon Check (Pty) Ltd			
<b>Report Distribution:</b> <input type="checkbox"/> Unrestricted Distribution <input type="checkbox"/> Limited Distribution <input checked="" type="checkbox"/> <b>No Distribution (without permission from the Client or responsible organisational unit)</b>			
<b>GHG reducing measure/technology:</b> The GHG emission reduction would happen by <del>by</del> producing several blended cement types through decreasing the otherwise 95% clinker share used in non-blended cement (i.e Portland cement. Reduction in clinker will bring corresponding reduction in GHG emissions.			
<b>Methodology</b>			
Number: ACM 0005 Version: 07.1.0 SS (s): 4 TA <del>(s)</del> 4.1 <b>Title:</b> "Approved consolidated baseline and monitoring methodology ACM0005.Increasing the blend in cement production". Scale: Small <input type="checkbox"/> Large <input checked="" type="checkbox"/>			

Summary of validation process (Compliance of paragraph 147(a), (b) and 148 (a) of VVS version 02 /B01/):

Carbon Check Pty Ltd.(Carbon Check), commissioned by Derba MIDROC Cement Pvt Ltd Co & Ethan Bio-Fuels Pvt Ltd Co to undertake validation of the proposed project activity "Clinker Optimization in Cement types production at Derba MIDROC Cement Plant" in Ethiopia, with regard to the relevant requirements for CDM activities.

The validation has been performed through a process of document review based on the project design document /01/ initially submitted for validation and the subsequent revisions follow up interviews with the stakeholders, resolution of outstanding issues and issuance of the validation report.

The project activity (measure) is feedstock switch in cement production thereby production of different blended cement types, recognized under the host country cement standard document. Blended cement is cement produced with clinker share below 95%. The project activity wishes to pioneer introducing low carbon cement to the domestic market to allow the host country achieve its sustainable development aspiration. It is planned to be achieved by producing several blended cement types through decreasing the otherwise 95% clinker share used in non-blended cement i.e. Portland cement

The compliance to all requirements as set forth in Article 12 of the Kyoto Protocol of the United Nations Framework Convention on Climate Change (UNFCCC), the modalities and procedures for CDM (CDM M&P) and relevant decisions of the Conference of the Parties, serving as meeting of the parties to the

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Kyoto protocol (COP/MOP) and the Executive Board of the CDM (CDM EB) have been evaluated and conformance to the validation requirements were confirmed based on the given information. A rule based approach was taken to conduct the validation and corrective action requests (CARs) and clarifications (CLs) were raised for relevant actions by the PP.

In conclusion 07 Corrective Action Requests (CARs) and 12 Clarification Requests (CLs) are identified for the proposed CDM project activity in relation to all relevant UNFCCC requirements for the CDM and all relevant host Party criteria and the applied baseline and monitoring methodology. All findings (CARs and CLs) have been closed satisfactorily.

The PP has taken actions and submitted to Carbon Check the revised project design document and supporting evidences. The validation team is of the opinion that the proposed project activity as described in the project design document /01/ meets all the relevant UNFCCC requirements for the CDM, as well as the host country's national requirements and if implemented as designed, is likely to achieve the emission reductions and contribute to the sustainable development of the host country. Carbon Check thus requests the registration of "Clinker Optimization in Cement types production at Derba MIDROC Cement Plant.

Validation Team		Role				
Full Name	Appointed for Sectoral scopes (Technical Areas)	Team Leader	Local Expert	Team Member (Auditor)	Technical Expert	Technical Reviewer
Mr. Sunil Kathuria	1.1, 1.2, 2.1, 4.1	x			x	
Mr. Ravi Shankar <a href="#">(until 16/01/2013)</a>	1.2,2.1, 2.2, 3.1, 13.1			x		
Mr. Pankaj Kumar	1.1,1.2, 3.1, 4.5, 13.1			x		
Fekadu Hailu			x			
Mr. Jan Gerrit Schute (technical expert to TR)	4.1				X	
Vikash Kumar Singh	1.2, 3.1, 13.1					x

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

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## Executive Summary – Validation Opinion

(Compliance of Paragraph 148 (B) OF VVS Version 02 /B01/)

Carbon Check has performed the validation of the project activity “Clinker Optimization in Cement types production at Derba MIDROC Cement Plant” in Ethiopia, with regard to the relevant requirements for CDM activities.

The review of the project design document /01/ and the subsequent follow-up interviews have provided Carbon Check with sufficient evidence to determine the fulfilment of the stated criteria. The project is a unilateral project and the DNA from Ethiopia confirmed that the project assists in achieving sustainable development.

The project correctly applies the approved baseline and monitoring methodology ~~“Approved consolidated baseline and monitoring methodology”~~ ACM0005 version 07.1.0 /B02/ “Increasing the blend in cement Production”.

By description of the project activity (e.g. by Clinker Optimization in Cement types production) the project activity results in reduction of GHG emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project activity are hence additional to any that would occur in the absence of the project activity.

The total emission reductions from the “Clinker Optimization in Cement types production at Derba MIDROC Cement Plant” are estimated to be an average of 571,832 tCO<sub>2</sub>e per year over the selected ten (10) years fixed crediting period. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given that the underlying assumptions do not change.

The monitoring plan is provided for the monitoring of the project activity’s emission reductions. The monitoring arrangements described in the monitoring plan are feasible within the project design and it is Carbon Check’s opinion that the project participant is able to implement the monitoring plan.

In conclusion, it is Carbon Check’s opinion that the project activity “Clinker Optimization in Cement types production at Derba MIDROC Cement Plant” in Ethiopia, as described in the PDD, version ~~65~~ of ~~0349/0542/20132~~ /01/ meets all relevant UNFCCC requirements for the CDM and all relevant Host Party criteria and correctly applies the baseline and monitoring methodology “ACM0005”, “Increasing the blend in cement production”, version 07.1.0/B02/. Carbon Check thus requests registration of “Clinker Optimization in Cement types production at Derba MIDROC Cement Plant” Ethiopia as a CDM project activity.

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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)
CH <sub>4</sub>	Methane
CL	Clarification Request
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> e	Carbon dioxide equivalent
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 Verification
MP	Monitoring Plan
NGO	Non-governmental Organization
ODA	Official Development Assistance
PDD	Project Design Document
PE	Project Emission
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
VVS	Validation and Verification Standard

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## 1 INTRODUCTION

Ethan Bio-Fuels Pvt Ltd Co has commissioned Carbon Check (Pty) Ltd, herein after referred to as “Carbon Check”, to carry out the validation of the project activity “Clinker Optimization in Cement types production at Derba MIDROC Cement Plant” in Ethiopia. This report summarizes the findings of the validation of the project activity, performed on the basis of UNFCCC criteria for CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting.

### 1.1 Objective

The objective of the validation is to have an independent evaluation of a project activity by a Designated Operational Entity against the requirements of the CDM as set out in decision 3/CMP.1, its annex and relevant decisions of the COP/MOP and CDM-~~EB~~-EB. In particular, the project's baseline, monitoring plan, and the project's compliance with relevant UNFCCC requirements and Host Party criteria are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project activity and its intended generation of Certified Emission Reductions (CERs). The Validation follows the requirements of the current version of the CDM validation and verification standard (CDM VVS – version 2) to ensure the quality and consistency of the validation work and the report.

### 1.2 Scope

The scope of validation is an independent and objective review of the project design. Review of the PDD is conducted against the requirements of the Kyoto Protocol, the CDM M&P and relevant decisions of the COP/MOP and the CDM-EB. Carbon Check follows a rule-based approach in the validation focusing on the identification of significant risks for project implementation and generation of CERs. Validation is not meant to provide any consulting towards the PP, however, the corrective actions requests (CARs) and clarifications (CLs) might provide input for improvement of the project design.

## 2 METHODOLOGY

Validation was conducted using Carbon Check procedures in line with the requirements specified in the CDM Modalities and Procedures the latest version of the CDM Validation and Verification Standard (VVS version 2), and relevant decisions of the COP/MOP and the CDM EB and applying standard auditing techniques.

The validation consisted of the following four phases:

- ✓ Document review
- ✓ Site visit
- ✓ Follow-up actions
- ✓ The resolution of outstanding issues and the issuance of the final validation report

The following sections outline each step in more detail.

### 2.1 Document Review

The PDD, version 02 of 30/11/2011 <sup>01</sup>, was initially reviewed by Carbon Check. Carbon check requested the PP to provide supporting information relating to applicability of the methodology, the baseline determination, the additionality of the project activity, the starting date of the project, the monitoring plan. The emission reduction calculations was provided in the form of a spread sheet “Blending benchmark & CERs” version 01 of 30/11/2011 <sup>02</sup> were assessed as part of the validation. Carbon Check reviewed the final version of the PDD Version ~~05~~-06 dated ~~05349/0512/20132~~ [R1]/2/ and confirms that the project meets all relevant UNFCCC requirements for the CDM and all relevant Host Party criteria and correctly applies the baseline and monitoring methodology “ACM0005”. version 07.1.0 /B02/.

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

	Author: title of document: version no: date: DD/MM/YYYY
/01/	CDM-PDD Version 2 dated 30 <sup>th</sup> November 2011 & Version 065 dated 05349/0542/20132 Clinker Optimization in Cement types production at Derba MIDROC Cement Plant, [R2]
/02/	Proof of First Major payment toward purchase of equipment dated 14/08/2009
/03/	Records of existing Cement Plant and their production capacities dated FDRE, Ministry of Industries dated 9 <sup>th</sup> July 2009
/04/	Mining Licence for Limestone & Pumice" issued by Ministry Of Mines and Energy FDRE dated 19 <sup>th</sup> May 2008 & 25 <sup>th</sup> November 2009.
/05/	EPC Contract and Break down of costs , CNBN
/06/	Details of O & M Expenses Holtec Limited , 2007
/07/	"Investigation of Calcite and Volcanic ash for their utilisation as cement filling and Additive materials: Mengistu Aregaw Kebede, June 2010
/08/	Confirmation email from Ethiopian DNA dated 28 <sup>th</sup> August 2012
/09/	Record of Public consultation meeting of stake holders ( Various dates of August 2007) of Derba MIDROC Cement Plant- Holtec Consulting Pvt Limited
/10/	Environmental and Social Impact assessment Report for Derba MIDROC Cement Plant, conducted by Holtec Consulting Pvt Limited
/11/	Communication from Project consultant & equipment suppliers stating the project life , dated 01/10/2012
/12/	Country Brief on Ethiopia dated march 24 <sup>th</sup> , 2008 published by eStandards Forum
/13/	Information about Cement investment in Ethiopia dated 09/07/2009 issued by Ministry of Trade and Industry ,Federal Democratic republic of Ethiopia(FDRE)
/14/	Newspaper published reports on Liquidity crunch and decline of currency value against USD dated 24 <sup>th</sup> & 31 <sup>st</sup> January 2010
/15/	Inflation data for the Month of March 2009 for Ethiopia issued by "Access Capital research"
/16/	"CDM technical implementation and financial feasibility document " dated 28 <sup>th</sup> Feb , 2008 by Ethan Bio fuels Limited.
/17/	"Fedral Negarit Gazeta" – compilation of the Income tax rates issued by FDRE dated 4 <sup>th</sup> July 2002
/18/	ES 1177 -1-2005 Ethiopian Cement Standard, issued by Quality and Standards Authority of Ethiopia
/19/	Details of cement production reports for the year 2007to 2009 by the Cement plants in Government and private sectors and Import of Cement.
/20/	Calculation of the combined margin emission factor of Ethiopia's electric power system according to UNFCCC Methodological tool- Tool to calculate emission factor for a Electric system" Volume 01 dated 11 <sup>th</sup> August 2008 for Federal Ministry of Agriculture and Forestry, Vienna
/21/	Spread sheet for calculation of emission factor of Ethiopia's electric power system according to UNFCCC Methodological tool- Tool to calculate emission factor for a Electric system"
/22/	Spread sheet for Blending bench mark & CER Calculations dated 30 <sup>th</sup> November 2011
/23/	Financial Plan Schedule -1 for the project dated 18 <sup>th</sup> April 2008
/24/	Host Country approvals issued in the name of "Ethan Biofuels Pvt Ltd Co dated 18 <sup>th</sup> December 2012 and the name of Derba MIDROC Cement Plant PLC dated 06 <sup>th</sup> August 2012
/25/	Modalities of Communication dated 30 <sup>th</sup> November 2011
/26/	Process flow diagram for Derba MIDROC Cement Plant,
/27/	Spread sheet for financial analysis dated 30 <sup>th</sup> November 2011
/28/	Letter of No objection –Environmental Protection Authority dated 12 <sup>th</sup> November 2008
/29/	Resettlement Action Plan Summary- Derba MIDROC Cement Plant,
/30/	Confirmation of non-receipt of ODA Funding - Derba MIDROC Cement Plant dated 27 <sup>th</sup> July 2012.
/31/	Techno Economic feasibility Study October 2007- Holtec Consulting private limited.
/32/	Commercial registration Certificate of Ethan Bio-fuels Pvt Ltd Co dated 3 <sup>rd</sup> August 2012
/33/	Articles of Association & Trade Licence Derba MIDROC Cement Pvt Ltd. Co dated 15 <sup>th</sup>



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	February 2006
/34/	Climate-Resilient Green Economy Sectoral Consultation Meeting dated 25 <sup>th</sup> July 2011 by FDRE
/35/	Prior Consideration of CDM form Dated 09 <sup>th</sup> November ,2009 & subsequent email communication with UNFCCC Secretariat dated 16 <sup>th</sup> & 17 <sup>th</sup> November ,2011
/36/	An email dated 28/08/2012 was received from Mr. Dereje Agonafir - Director, Environmental Units Programme Directorate-Environmental Protection Authority of The Federal Democratic Republic of Ethiopia Confirming the authenticity of LOA.
/37/	<u>Name plate details &amp; Technical specifications of 1701KW DG set</u>

Background investigation and other referred documents/websites:

/B01/	CDM Validation and Verification Standard (Version 2.0) Project Standard version, 01
/B02/	CDM Executive Board: <del>Baseline and monitoring methodology</del> “Approved consolidated baseline and monitoring methodology, ACM0005 “. Increasing the blend in cement production”, version 07.1.0
/B03/	CDM Executive Board: Guidelines for project design document (CDM-PDD) and the proposed new baseline and monitoring methodologies (CDM-NM)” ver. 1.0. EB 66, Annex. 08
/B03/	CDM Executive Board: “Methodological tool Demonstration and assessment of additionality version 6.0 EB 65 Annex 21
/B04/	CDM Executive Board: Tool to calculate the emission factor for an electricity system”, Version 02.2.1 of 29/09/2011
/B05/	CDM Executive Board “Project and leakage emissions from road transport of freight” (Version 01)
/B06/	<a href="http://www.un.org/special-rep/ohrls/lcd/LDCs-list/profiles/ethiopia.htm?id=231">http://www.un.org/special-rep/ohrls/lcd/LDCs-list/profiles/ethiopia.htm?id=231</a> .
/B07/	Guidelines for objective demonstration and assessment of barriers” (Version 01)
/B08/	“Assessment of the validity of the original/current baseline and to update of the baseline at the renewal of crediting period” (Version 01)
/B09/	IPCC 2006
/B10/	<a href="http://cdm.unfccc.int">cdm.unfccc.int</a> Glossary of CDM terms, Version 06
/B11/	<a href="http://essays24.com/print/Introduction-Ethiopian-Cement-Market/30724.html">http://essays24.com/print/Introduction-Ethiopian-Cement-Market/30724.html</a>
/B12/	<a href="http://www.businessweek.com/news/2011-12-06/ethiopian-billionaire-s-cement-plant-to-start-output-this-month.html">http://www.businessweek.com/news/2011-12-06/ethiopian-billionaire-s-cement-plant-to-start-output-this-month.html</a>
/B13/	<a href="http://www.2merkato.com/201204231143/ethiopias-plan-to-boost-cement-production-successful">http://www.2merkato.com/201204231143/ethiopias-plan-to-boost-cement-production-successful</a>
/B14/	<a href="http://www.ji-cdm-austria.at/blueline/upload/Ethiopia_EmissionFactor_FINALREPORT.pdf">http://www.ji-cdm-austria.at/blueline/upload/Ethiopia_EmissionFactor_FINALREPORT.pdf</a>
/B15/	<a href="http://www.ji-cdm-austria.at/blueline/upload/Ethiopia_EmissionFactor_FINALREPORT.pdf">http://www.ji-cdm-austria.at/blueline/upload/Ethiopia_EmissionFactor_FINALREPORT.pdf</a>
/B16/	<a href="http://somalilandpress.com/ethiopian-largest-cement-plant-to-start-output-this-month-24838">http://somalilandpress.com/ethiopian-largest-cement-plant-to-start-output-this-month-24838</a>
/B17/	<a href="http://www.londonmet.ac.uk/fms/MRSite/acad/dass/ISJ%20Journal/V3N1/03_Barriers%20to%20E-commerce%20in%20developing%20countries_Lawrence&amp;Tar.pdf">http://www.londonmet.ac.uk/fms/MRSite/acad/dass/ISJ%20Journal/V3N1/03_Barriers%20to%20E-commerce%20in%20developing%20countries_Lawrence&amp;Tar.pdf</a>
/B18/	<a href="http://www.agco.com/documents/doc-53.pdf">http://www.agco.com/documents/doc-53.pdf</a>
/B19/	<a href="http://addischamber.com/aaccsa/userfiles/2011-09-29_PSDBooks/MarketPotentialAssessment.pdf">http://addischamber.com/aaccsa/userfiles/2011-09-29_PSDBooks/MarketPotentialAssessment.pdf</a>
/B20/	<a href="http://www.ethemb.se/ee.../Manufacturing%20of%20Cement%202006.doc">www.ethemb.se/ee.../Manufacturing%20of%20Cement%202006.doc</a>
/B21/	<a href="http://cdm.unfccc.int/Projects/PriorCDM/notifications/index.html">http://cdm.unfccc.int/Projects/PriorCDM/notifications/index.html</a>
/B22/	<a href="http://www.ginbot7.org/Statement/Ethiopia_s_Economic_Fallacy_Nominal_Growth_and_Real_Poverty.htm">http://www.ginbot7.org/Statement/Ethiopia_s_Economic_Fallacy_Nominal_Growth_and_Real_Poverty.htm</a>
/B23/	<a href="http://www.globalcement.com/pdf/eGCJan13ns.pdf">www.globalcement.com/pdf/eGCJan13ns.pdf</a> [R3]

## 2.2 Follow-up actions

On 26-27th July, 2012, validation team of Carbon Check visited the office of the project participant to perform interviews with PPs, and visited the project site (Derba MIDROC Cement’s office at Addis

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Abbaba and plant site at Derba Village and found that the plant is in advance state of commissioning and production trial runs are going on .The project is likely to be fully commissioned by End of November 2012. Validation of the proposed project activity has been carried out by reviewing available designs, reports and by interviewing the project participant. The key personnel interviewed and the main topics of the interviews are summarized in the table below:

	Date	Name and Role	Organization	Topic[R4]
/a/	26-27th July, 2012	Mr. Haile Asseside (CEO)	Derba MIDROC Cement Pvt Ltd Co	Company's background
/b/	26-27th July, 2012	Mr. Tadesse Kakede (Project Director)	Derba MIDROC Cement Pvt Ltd Co	Project details,/ Cement industry
/c/	26-27th July, 2012	Mr. _____ Ambachew. F.Admassie Project Developer (Authorised representative)	Ethan Biofuels Pvt Ltd Co	Project Details baseline, methodology, Stake Holder <a href="#">consultation</a> process
/d/	26-27th July, 2012	Mr. Yohannes Plant in charge	Derba MIDROC Cement Pvt Ltd Co	Operations/Monitoring

## 2.3 Resolution of outstanding issues

The objective of this phase of the validation is to resolve any outstanding issues\_which need to be clarified for Carbon Check's conclusion on the project design. To guarantee transparency a validation protocol has been customized for the project. The protocol shows in a transparent manner the requirements, means of validation and the results from validating the identified criteria. The validation protocol consists of four tables; the different columns in these tables are described in the figure below (see Figure 1). The completed validation protocol is enclosed in Appendix A to this report.

A corrective action request (CAR) is raised if one of the following occurs:

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

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

A forward action request (FAR) is raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the CDM requirements for registration. CARs, CLs and FARs identified are included in the validation protocol in Appendix A of this report.

Figure 1 Validation protocol tables

Validation Protocol, Table 1 - Mandatory Requirement		
Requirement	Reference	Conclusion
The requirements the project must meet.	Makes reference to the documents where the answer to the requirement is found.	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) is being raised in case of a requirement not being met. A Request for Clarification (CL) is used when the validation team has identified a need for further clarification and a

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		Forward Action Request (FAR) is being raised to highlight issues which require review during the first verification of the project activity.
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Table 2 is for the draft report; any updates in the final report are discussed in Table 3.

Validation Protocol, Table 2 - Requirement Checklist					
Checklist Question	Ref.	MoV	Comments	Draft Conclusion	Final Conclusion
The various requirements in Table 1 are linked to checklist questions which the project should meet. The checklist is organized in seven different sections.	Makes reference to document(s) where the answer to the checklist question or item is found.	Explain how conformance with the checklist question has been investigated. Examples are document review (DR), interview or any other follow-up actions (I), cross checking (CC) with available information relating to projects or (N/A) means not applicable.	The discussion on how the conclusion has been arrived at and the conclusion on the compliance with the 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 3 - Resolution of Corrective Action Requests and Clarification Requests			
Corrective Action Request and/or Clarification Request	Reference to Table 2	Response by project participant(s)	Validation Conclusion
The CAR(s) and/or CL(s) raised in Table 2 are repeated here.	Reference to the checklist question number in Table 2 where the CAR or CL is explained.	The responses given by the project participant(s) to address the CAR(s) and/or CL(s).	The validation team's assessment and final conclusion of the CAR(s) and/or CL(s).

Validation Protocol, Table 4 - Forward Action Requests			
Forward Action Request	Reference to Table 2	Response by project participant(s)	Validation Conclusion
The FAR(s) raised in Table 2 is/are repeated here.	Reference to the checklist question number in Table 2 where the FAR is explained.	Response by the project participant(s) on how forward action request(s) will be addressed prior to first verification.	If any

## 2.4 Internal quality control

Before being submitted to the client UNFCCC, all the revisions of the validation report were subjected to an independent technical review to confirm that all validation activities have been completed according to the pertinent Carbon Check procedures.

The technical review is to be performed by (a) technical reviewer(s), qualified in accordance with Carbon Check's qualification procedure for CDM validation and verification.

## 2.5 Validation team and the technical reviewer(s)

The validation team and the technical reviewer(s) consist of the following personnel:

Validation Team	Type of Involvement
-----------------	---------------------

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Full Name	Appointed for Sectoral scopes (Technical Areas)	Supervision of work	Desk review	Site visit & Interview	Report & protocol writing	Technical Expert input	Technical Reviewer
Mr. Sunil Kathuria	1.1, 1.2, 2.1, 4.1	X	X	X	X	X	
Mr. Ravi Shankar (Until 16/01/2013)	1.2,2.1, 2.2, 3.1, 13.1	X	X	X		X	
Mr. Pankaj Kumar	1.1,1.2, 3.1, 4.5, 13.1				X		
Mr. Fekadu Hailu (Local Expert)					X		
Mr. Jan Gerrit Schute (technical expert to TR)	4.1					X	
Mr. Vikash Kumar Singh	1.2, 3.1, 13.1						X

## 3 VALIDATION FINDINGS

This section provides an overview of the validation activities undertaken by Carbon check in order to arrive at the final validation conclusions and opinion. It includes general conclusions based on the Clean Development Mechanism Validation and verification standard, version 02.0.<sup>/03/</sup>

### 3.1 Approval and Participation

The project's host Party is Ethiopia.

Host Country approval (LoA) has Not been provided to DOE for Validation and CAR 1 has been raised in this regard and successfully closed after receipt of LoAs <sup>/24/</sup>.

The project participants Derba MIDROC Cement Pvt Ltd Co and Ethan Bio-Fuels Pvt Ltd Co are private entities. Ethiopia fulfils the requirements to participate in the CDM, having ratified the Kyoto Protocol on 14/02/2005 and having established as DNA the "Environment protection Authority (EPA)" as per the UNFCCC website <sup>/34/</sup>. The project participants are correctly listed in Table A.3 of the PDD and the information is consistent with the contact details provided in Annex 1 of the PDD <sup>/01/</sup>. The letter of approvals<sup>/24/</sup> were found to be unconditional with respect to § 39 (a) to (d) VVS, ver 02 <sup>/B01/</sup>. The letter of approval from host country confirms the contribution of the proposed project activity to the sustainable development of Ethiopia.

The project participants are correctly listed in table A.3 of the PDD and the information is consistent with the contact details provided in Annex 1 of the PDD <sup>/01/</sup>. Participation in the project activity of the PPs has been authorized, as confirmed in the LoAs issued by the DNA of the party concerned. The Validation team had obtained an email confirmation from the DNA of Ethiopia that that the submitted LoAs are authentic and thus confirms to the requirement of § 42 VVS ver 02 <sup>/03 /</sup>. The following table summarizes the details of the LoA:

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Project participants	Derba MIDROC Cement Pvt Ltd Co <sup>1</sup> Ethan Bio-fuels Pvt Ltd Co
Party involved	Ethiopia
APPROVAL	
LoA /24/ received	Yes The LOAs are received for both the project participants i.e. Ethan Bio-fuels Pvt Ltd Co. & Derba MIDROC Cement Pvt Ltd Co.
Date of LoA /24/	18.12.2012 for Ethan Bio-fuels Pvt Ltd Co & 06.08.2012 for Derba MIDROC Cement Pvt Ltd Co-Co.
LoA /24/ received from	Environmental Protection Authority The Federal democratic republic of Ethiopia
Validation of authenticity	An authenticity has been carried out with Ethiopian DNA confirming the issuance of both LOAs <sub>/36/</sub> .
Validity of LoA /24/	No end date is mentioned on LOA. Validation team considers the LoA in accordance with § 39 to §42 VVS, ver. 02 /B01/.
PARTICIPATION	
Party is party to Kyoto Protocol	Yes, Ethiopia ratified the Kyoto Protocol on 14/02/2005.
Voluntary participation	Yes, stated in the LoA /24/
Diversion of official development aid towards host country	No, there is no Annex I country involved.
Project contribution to SD	Yes, stated in the LoA /24/

The validation of approval and participation has been done on the basis of § 39-42 and §46-48 of VVS ver 02 and validation team confirms that the proposed project activity meets the requirement of § 38 and § 45 of VVS ver 02 <sub>/B01/</sub>.

## Validation of ODA

The proposed project does not involve any public funding from an Annex I Party, and the validation did not reveal any information that indicated that the project could be seen as a diversion of official development assistance (ODA) funding towards the Host Country. A confirmation in this regard has been submitted by the PP<sub>/25/</sub>.

## Confirmation of MoC

The Modalities of Communication (MoC) <sub>/25/</sub> was received from the PP and hence confirms to the requirement of § 54(a) of VVS version 02 <sub>/B01/</sub>. As required in Procedures for Modalities of Communication between Project Participants and the Executive Board, the Validation Team has verified that the name of authorised signatories for future communication related to the corresponding scope of authority with UNFCCC. The MoC has been checked as per the requirement of § 53 and § 57 of VVS ver 02 and found correct. The Validation Team confirms that the signatory and contact details on the MoC <sub>/25/</sub> is authorized and credible and hence confirms to the requirement of § 53 of VVS ver 02.

Based on above assessment requirement of §58 of VVS ver 02 /B01/ has been met.

<sup>1</sup> In the provided LoA, Derba MIDROC Cement PLC has been mentioned instead of Derba MIDROC Cement Pvt Ltd Co. A remark has been also added in the PDD that (Private Limited Company can be written in short as Pvt Ltd Co or PLC in Ethiopia) and acceptable to the validation team.

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## 3.2 Project Design document

The PDD /01/ hosted for GSC was in VVM track, later on during the course of validation PP has shifted to VVS track and changed the PDD in VVS track format. This shift of VVM to VVS is allowed as per UNFCCC rules as verified from the Implementation timeline<sup>2</sup> available on UNFCCC website.

Referring to paragraphs 62– 63, VVS version 02.0 /B01/, Carbon Check confirms that the PDD /01/ is based on the currently valid PDD template and is completed in accordance with the applicable guidance document “Guidelines for project design document (CDM-PDD) and the proposed new baseline and monitoring methodologies (CDM-NM)” ver. 1.0. EB 66, Annex. 08 under VVS track. This confirms the compliance of § 62 and 63 of VVS version 02./B01/.

## 3.3 Project Design

Referring to paragraphs 62 – 69, VVS version 02.0

~~Preface: Carbon Check shall confirm that the description of the proposed CDM project activity as contained in the PDD sufficiently covers all relevant elements, is accurate and that it provides the reader with a clear understanding of the nature of the proposed CDM project activity.~~

This project is a Greenfield Cement Plant in the private sector & the purpose of the proposed project activity is to produce type of Blended Cements as per Ethiopian Cement Standard ES1177-1:2005. The project will produce blended cements of following types:

Blended Cement Type CEMII/B-P: - The lowest clinker share allowed for CEMII/B-P by national standard is 65% and the lowest clinker share of this cement type produced by private plants is 85%, however for this type of blended cement the baseline clinker % has been determined considering all the plants including those owned by the state and also imported cement having 95% of clinker. The base line case thus determined is at 71.28%. The project activity plans to produce it at 65% clinker share.

Blended Cement Type CEMII/B-L No Cement Plant in the private sector is producing this type of cement the lowest clinker share allowed for CEMII/B-L by national standard is 65% and the lowest clinker share of this cement type manufactured or imported stands at 95%. The project activity plans to produce it at 65% clinker share.

Blended Cement Type CEM IV/ B/: This type of cement is not produced in Ethiopia by any of the manufactures and benchmark clinker % share for this type is the imported OPC cement with a clinker share 95%. The project activity plans to produce it at 45% clinker share.

By manufacturing above types of blended cements the project will reduce clinker % in cement and increase % of additives. Displacing of clinker share% by additive will result in reduced consumption of clinker thus reducing the emissions of CO<sub>2</sub>.

The project activity is located at Village Derba 26 km off Chanco town in, Ethiopia. The Derba Cement plant site is about 66 km from Addis Ababa, the capital of Ethiopia Oromiya region of Federal Republic of Ethiopia and the total installed capacity of the Project is 56700 TPD of clinker equivalent to 907500 TPD of cement production the representative Geo coordinates of the project. Site is 09° 27 5.'28" N, 38° 34 5'.31\_E

The project description /01/ was validated through review of following documents and a physical site visit carried out on 26-27/07/2012

- I. Techno Economic Feasibility Study/31/
- II. Mining Licences /04/
- III. Process flow diagrams/26/
- IV. Resettlement Plan summary/29/
- V. Capacity of DG set /36/

DOE confirms the correctness and accuracy of site location, project design, equipments, and process flow diagram by means of the site visit and document review /01/./04/./26/./29/./36/. The Project plant is

<sup>2</sup> [http://cdm.unfccc.int/Reference/Manuals/VVM\\_and\\_VVStimeline.pdf](http://cdm.unfccc.int/Reference/Manuals/VVM_and_VVStimeline.pdf)



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comparable (based on validation team's experience of validation of other cement projects) with the other cement Project site having following components:

- Raw Material Mines
- Raw material storage silos, Yard
- Additives storage area
- Cement Kiln
- Clinker storage Silos
- Cement Grinding Mill
- Bag Packaging & Transportation

The Power requirement of the project- is 45 MVA, checked and confirmed by the validation team by reviewing the Techno Economic Feasibility Study<sup>/31/</sup>. This will be entirely met<sup>/31/</sup> from the electricity supplied by the grid. There is no captive energy unit planned on project site and the same was confirmed by validation team during the site visit. However to meet the sudden outages of electricity from the grid and operating the essential machinery/Control systems of the plant -a -1701 kW Diesel generator set is installed at project site. The specification of DG sets have been validated through name plate details of the Generator /37/.

The starting date of the project activity is 14/08/2009. On this day a large payment of €43.19M was made toward purchase of equipment. It has been verified by Carbon Check through the bank transaction slip <sup>/02/</sup> and it is the earliest date on which the project participant has committed to expenditures related to the implementation or related to the construction of the project activity as per the Glossary of CDM Terms<sup>/11/</sup>. The Project is under advanced stage of commissioning and is undergoing trial runs. The plant was earlier planned to be commissioned by March 2012 but the revised estimates indicated to the DOE during the site visit on 26/07/2012 that it is likely to be commissioned by November 2012.

The expected operational lifetime of the project activity is 20 years and this has been confirmed by validation team based on document review of the Letters from plant design consultant and plant maintenance contractor<sup>/11/</sup>.

A fixed crediting period of Ten years has been chosen for the project, starting from 15/06<sup>2</sup>/2013 or the date of registration, whichever is later.

The GHG emission reductions are estimated to be average 571,832 tCO<sub>2</sub>e per year and 5718,320 tCO<sub>2</sub>e over the ten-year crediting period.

Carbon Check was able to verify all the documented evidence listed above during the validation process and can confirm that data and considerations are complete and accurate.

Carbon Check confirms that the description of the proposed CDM project activity, as contained in the PDD sufficiently covers all relevant elements, is accurate and complete and that it provides the reader with a clear understanding of the nature of the proposed CDM project activity.

The main changes between the PDD <sup>/01/</sup> published for the 30 days stakeholder commenting period and the final version 05 submitted for registration are presented in the below table as follows:

Subject	Webhosted PDD /version 02 dated 30 November 2011	Validated PDD version 06 <sup>5</sup> dated 49 <sup>h</sup> December 2012 <sup>053/05/2013</sup>	Assessment
PDD	Template used was version 03	Template revised to Version 06 <sup>5</sup>	DOE confirms that most current version has been used and appropriate
Project Title	Clinker Optimization in cement types production at Derba MIDROC cement Plant	Clinker Optimization in cement types production at Derba MIDROC cement Plant	There is no change in the project title however on the UN interface it was

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			observed that the word "Optimization" is appearing as Optimisization. An email has been sent to the UNFCCC Secretariat to do necessary amendment.
<b>Project Proponent</b>	Derba Midrock Cement Pvt Ltd Co.  Ethan Bio-Fuels Pvt Ltd Co	Derba Midrock Cement Pvt Ltd Co.  Ethan Biofuels Pvt Ltd. Co	There is no change in the PP. However in LoA, Derba Midrock Cement PLC has been stated instead of Derba Midrock Cement Pvt Ltd Co. (A remark has been also added in the PDD that (Private Limited Company can be written in short as Pvt Ltd Co or PLC in Ethiopia) and acceptable to the validation team.  The LoA of Ethan Biofuels Pvt Ltd. Co has undergone a change to revise the PP name from Ethan Biofuels PLC to Ethan Biofuels Pvt Ltd. Co during the course of validation .It has also obtained amended revised LOA dated 18/12/2012 from Ethiopian DNA.
<b>Methodology &amp; Tools</b>	ACM0005 Version 06 has been used  Guidelines on Investment Analysis version 04  -  -	Updated to ACM0005 Version 07.1  Guideline on Investment Analysis version 05  Project and Leakage emissions from Road Transport of freight. Version 01  Assessment of the validity of the original/current baseline and to update of the baseline at the renewal of crediting period" (Version 01)	DOE confirms that most current version has been used and appropriate
<b>Additionality</b>	Additionality approach	Additionality approach	The approach is



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	was based on Investment analysis Primary and Barrier analysis (secondary)	has been developed on the basis First of its kind and Barriers & Project in LDC	acceptable and in line with Methodological tool Demonstration and assessment of additionality version 6.0 EB 65 Annex 21 <sub>/06/</sub> .
<b>Estimated amount of annual average GHG emission reductions</b>	576,029 tCo2e	571,832 tCO2e	DOE confirms that Estimates are based on the basis ACM0005 version 07 and are the most conservative Refer CAR-05,CL-09
<b>Benchmark clinker share for Cement Type CEM II/ B-P CEMII/ B-L &amp; CEMIV/B</b>	71% 95%	71.28% 95%	DOE confirms that Benchmark clinker share is based on the basis ACM0005 version 07 and in line with the complete national market of Ethiopia. CL-8

## 3.4 Application of selected baseline and monitoring methodology

Referring to paragraphs 70 – 76, VVS version 02.0

The project applies the Approved consolidated baseline and monitoring methodology ACM0005, version 07.1.0 <sub>/B02/</sub>, which also uses the following tools:

- Methodological tool Demonstration and assessment of additionality version 6.0 EB 65 Annex 21<sub>/B06/</sub>.
- Methodological tool- Project and Leakage emissions from road transport of freight, version 01.0 EB63 Annex 10<sub>/B07/</sub>
- Tool to calculate the emission factor for an electricity system”, Version 02.2.1 of 29/09/2011 <sub>/B08/</sub>

The selected version of the methodology at the time of hosting of PDD /01/ was ACM0005, version 06.0. The applied version of methodology is the latest version of methodology 07.1.0.

Applicability criteria for the baseline methodology are assessed by the validation team by means of document review and interview. It is agreed in the validation team’s opinion that the project activity fully met the criteria as described below:

<b>Applicability criteria as per methodology ACM0005 Version 7.1.0<sub>/B02/</sub></b>	<b>Means of Validation</b>
There is no shortage of additives related to the lack of blending materials. Project participants should demonstrate that there is no alternative allocation or use for the additional amount of additives used in the project activity. If the surplus availability of additives is not substantiated the project emissions reductions (ERs) will be discounted as outlined below;	There is no shortage of additives related to the lack of blending materials. The Plant uses Lime stone and Pumice as additives. The continuous availability for both of them is validated through <a href="#">mining licenses<sub>/04/ submitted for validation</sub></a> have long term mining rights for Pumice over 1.516 Sq KM in the OROMIA region of Ethiopia for 20 years up to 2029 <sub>/04/</sub> .
This methodology is applicable to domestically sold output of the project activity plant and	Since Ethiopia is a cement deficient country and relies on significant imports, the export

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Excludes export of blended cement	component is non-existing. This was validated through Essay- Introduction to Ethiopian Cement Market /B11/
The methodology is not applicable if blending of cement outside the cement production plants is a common practice in the host country.	<u>Blending of cement in Ethiopia is carried out only in cement production Plants. This is valid for plants owned by Government as well as private parties. The above information was <del>was</del> validated by reviewing the production data <del>for the cement plants for the period 2007-2008-2009</del> <del>for all cement plants.</del> The data was procured by Environmental Protection Authority of FDRE Ethiopia /19//13/. The production data /19//13/ clearly states the locations of the plant and DOE confirms that there was no instance available , which indicates that the blending of cement is carried out on sites, outside the cement production plants. <del>in private sector.</del> Out of the four plants in private sector <u>only one plant (National Cement) produced a blended cement with over 80.3 ~74% clinker contents during 2007-2009</u> /03//22/ <del>only one plant manufactures BC. Hence DOE confirms that</del> <del>The cement blending is not neither</del> <del>a common practice in the private cement plants in Ethiopian Cement Production Plants and nor at any other place outside and away from Cement Production Plant.</del> This was further <u>validated</u> <del>cross-checked</del> through the clear listing of cement plants in Publication "Global Cement which carried out Ethiopian Cement Focus ( Page 49-51)/B23/. There are three cement plants in private sector which were commissioned during 2007-2008 and of these only one (National Cement) produced a blended cement with over 80.3 ~74% clinker contents during 2007-2009 /03//22/. The government plants have been excluded from this comparison.</u>
This methodology is not applicable for cement plants that do not produce clinker (e.g. grinding only plants).	<del>Since</del> <del>The</del> the project plant has <u>a design</u> clinker generation capacity of 5600T/D and <u>the whole of this quantity shall be used in production of blended cement.</u> <del>the same</del> was validated through TEFR /31/. <u>The design capacity of <del>cof</del> cCement grinding system as per above study is 9000 T/Day, which is sufficient to grind and blend suits 5600T/D of clinker &amp; 1889 t/d of additive. Hence DOE confirms that whole of the clinker produced in the plant will be used in the project activity.</u>
Adequate data are available on cement types in the market.	Adequate data are available on cement types in the market. <u>The available data was procured by Environmental Protection Authority of FDRE Ethiopia /19//13/.</u> The data has been also presented in the PDD This was <u>further</u> validated through news clipping

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	and the contents available in public domain. Bloomberg News/ <sup>B12/</sup> & Ethiopian business portal dated 23/04/2012 <sup>/B13/</sup>
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The selected baseline and monitoring methodology is an approved methodology. Based on above assessment, Carbon Check confirms that the project activity meets the applicability conditions of the methodology and concludes that the project activity correctly applies the approved baseline and monitoring methodology ACM0005, version 07.1.0 <sup>/B02/</sup>

Carbon Check confirms the requirement laid down in § 70, §73 to §76 & §77 of VVS version 02 <sup>/B01/</sup>.

## 3.5 Project boundary and baseline identification

### 3.5.1 Project boundary

As ~~per the~~ methodology/<sup>B02/</sup>, the spatial extent of the project boundary includes the Cement Kiln where the calcinations process is the main producer of GHG emissions.

It also includes in the project boundary the usage of fuel for the purpose of

- Kiln burners
- ~~Generation of electricity\*~~. ~~(Nil as no onsite generation on project site)~~
- For drying of raw materials including additives.
- For preparation of additives.

The sources and sinks of greenhouse gas identified in the PDD /01/ are deemed to be appropriate and assessed below:

	GHGs involved	Description
Baseline emissions	CO <sub>2</sub>	Calcinations of Raw Material in Kiln. Use of fuel in the kiln including burners, for drying raw materials and kiln fuel <del>Use.</del> <u>Use of</u> electricity for the preparation of additives and grinding BC.  The baseline emissions due to use of electricity will <del>be negligible</del> <del>due to Country's very low emission factor,</del> <u>hence excluded as a conservative approach (for the ex-ante estimation purpose only).</u>
Project emissions	CO <sub>2</sub>	Calcinations of Raw Material in Kiln. Use of fuel in the kiln including burners for drying raw materials and kiln fuel <del>Use.</del> <u>Use of</u> electricity <u>from the grid and self generation*</u> for the preparation of additives and grinding BC
Leakage	CO <sub>2</sub>	Transportation of incremental additives.

~~\* Though There is no captive energy unit planned on project site and the same was confirmed by DOE during the site visit. However to meet the sudden outages of electricity from the grid and operating the essential machinery/Control systems of the plant a 1701 kW Diesel generator set is installed at project site. The specification of DG sets have been validated through name-plate details /37/. The self generated electricity will be measured and accounted for emission ex-post.~~

In summary, the project boundary was correctly identified in accordance with the methodology ACM0005, version 7.1.0 <sup>/4/</sup>. All greenhouse gas emissions occurring within the proposed project activity

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boundary as a result of the implementation of the proposed CDM project activity have been appropriately addressed in the PDD /01/.

The identified project boundary and selected sources of emissions are justified for the project activity. The validation of the project activity did not reveal other greenhouse gas emissions occurring within the proposed CDM project activity boundary as a result of the implementation of the proposed project activity which are expected to contribute more than 1% of the overall expected average annual emission reduction, with respect to the methodology applied.

Based on the review of supporting documented evidence provided by the project participant, Carbon Check can confirm that the project boundary and emission sources described in the PDD /01/ are accurate and complete, and also that the selected sources and gases are justified for the proposed project activity.

## 3.5.2 Baseline Identification

The project is a large scale Greenfield project in private cement manufacturing space. For determination of base line initially the Government owned plants which were commissioned before the year 2000 have been excluded.

The purpose of the proposed project activity is to manufacture ordinary port land cement (OPC) Cements of type CEM-I having clinker % > 95% which is commonly produced , and blended cements (BC) of types CEMII/B-P, CEMII/B-L and CEM IV/B

As per applied methodology ACM0005, applicable to BC. The alternate scenarios for each of the Cement types were discussed separately.

CEMII/B-P,

CEMII/B-L and

CEM IV/B

PP applied “Tool to identify the baseline and demonstrate additionality version 6.0 /B03/” for identification of most plausible baseline scenario which is in accordance with applied methodology ACM0005 /B02/

For cement type CEMII/B-P the continuation of the current blending trend in private cement industry is the baseline scenario for this type of cement

For Cement type CEMII/ B-L & CEM IV/B the only credible scenario is to manufacture or import the comparable quality of cement

Following three alternative baseline scenarios has been considered for each type of BC: These alternatives are consistent with all applicable mandatory laws and regulations. The alternatives are:-

1. ~~4.~~The project activity undertaken without being a registered a CDM activity
2. ~~2.~~The cement requirement is met through existing manufacturing or import of cement he project activity.
3. ~~3.~~Continuation of current production practices of types of cements produced in the country.

The above scenarios were validated through the cements output reports /03/&22/ of all manufacturers in private sector i.e. Dejan, Abyssenia, Jema and National for the periods 2007-08-09

From the review of data Carbon Check confirmed that Cement types CEMII/B-L and CEM IV /B are going to be produced first time in the country and also have never been imported in the country.

The Cement type CEM II B-P is produced in the government plants (Mossoro and Muger Cement) and Semi private plant (National Cement 80% private & 20% government owned). Since the numbers of private cement producing plant are less than 5 ~~in the Ethiopia~~ PP has considered the complete

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National Market including government plants to determine baseline % of clinker share as per approach (iii) of step 2.1(a) of methodology.

Mosobo Cement*	Mugher Cement*	National Cement	Imported OPC
71.28%	73.49%	74.97%	95%

## • Government owned Plants

Carbon check confirms that the baseline benchmark clinker share for the type of CEM II B-P BC in the Ethiopia is 71.28% which is most appropriate and conservative considering all the cement producing units in the country (Govt. as well Private). Baseline scenario chosen ~~are~~ is consistent with applicable mandatory laws and regulations and comply to complies with the Ethiopian Cement standard ES 1177.1.2005/~~18/~~13/. DOE also confirms that– PP has chosen the option 2 of the methodology where it update the benchmark annually based on 2% default increase in the share of additives (i.e. decreasing share of clinker) up to the limit of the regulatory /product norm in the region/national market.- The DOE confirms that project will reach the statutory limit of 65% for this type of cement only by the end of the crediting period in the year 2022.

The Cement types CEMII/B-L and CEM IV/B are not produced in the country by any of the existing Cement plants. This is the first time that these types will be produced in Ethiopia. Hence for benchmark calculation, Step 2.1 of the methodology is followed which states, “Data concerning average blending ratio, annual production and import of the relevant cement type(s) in the region shall be collected for one year prior to the start date of CDM project activity. Since there is no blending ratios available for this type of cements in any of the cement plants in Ethiopia the blending ratio of imported cement of 95.00 % has been taken as a bench-mark-.

~~The limit of the regulatory standard product norm in Ethiopia requires the minimum clinker share for type CEMII/B-L to be 65%. The DOE verifies that this is stated in Ethiopian cement standard. As PP's have shown in the CERs calculation spreadsheet, the lowest benchmark clinker share that will be achieved through 2% autonomous increase in additive every year in the crediting period is 94.14% (at the tenth crediting year) which is much higher than the above lowest allowable limit~~

~~The limit of the regulatory standard product norm in Ethiopia requires the minimum clinker share for type CEMIV/B to be 45%. The DOE verifies that this is stated in Ethiopian cement standard. The PP's propose to produce it at this level through the CDM project activity. As PP's have shown in the CERs calculation spreadsheet, the lowest benchmark clinker share to be achieved through 2% autonomous increase every year in the crediting period is 94.02% (at the tenth crediting year) which is much higher than the above lowest allowable limit.~~

-Validation team confirms that the limit of the regulatory standard product norm in Ethiopia requires the minimum clinker share for type CEMII/B-L to be 65%(refer table 001 of PDD) and for type CEMIV/B to be 45%. The same is verified by the validation team by reviewing the Ethiopian cement standard. Validation team based on review CER calculation spread-sheet confirms that the lowest benchmark clinker share that will be achieved through 2% autonomous increase in additive every year in the crediting period is 94.14% (at the tenth crediting year) and is 94.02% (at the tenth crediting year) for the type CEMII/B-L and CEMIV/B respectively. This is higher than the above lowest allowable limit.

Carbon Check's Concludes that the approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and that the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity.

Carbon Check was able to verify all the documented evidence listed above during the validation process and can confirm that all the assumptions and data used by the project participants are listed in the PDD, including their references and sources all documentation used <sup>/13/,/18/,/19/</sup> referred to under section 2.1, is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD

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Relevant national and/or sectoral policies and circumstances <sup>/18/,/19/</sup> are considered and listed in the PDD

## 3.5.3 GHG Emission Reductions:

The calculation has been done as per applied methodology. The values for the monitoring parameters and parameters available at validation are applicable to the project activity. The input parameters (fixed values as well as estimations) have been chosen from the TEFR Study<sup>/31/</sup>. The values used for calculation of benchmark clinker has been sourced from for the period 2008 for all cement plants. The data was procured by Environmental Protection Authority of FDRE Ethiopia <sup>/19/,/13/</sup>.

Though the project plant is a privately owned plant but for the sake purpose of calculation of baseline clinker the data for ~~entire~~all cement production in Ethiopia is considered. PP has used option 2 -which requires PP's to update benchmark annually based on an annual 2% increase in share of additive (to account for autonomous increase of additive in the market). PPs have directly interpreted this into mathematical application. Example: For type CEMII/B-P; the initial year clinker share obtained through step 2.1 is,  $B_{blend,1}$  was 71.28%, and this means the additives share is 28.72% (i.e.  $100\% - 71.28\%$ ). On year 2, a 2% autonomous increase in additive share results in  $28.72 + 2\% \times 28.72 = 29.29\%$ . The clinker share therefore becomes  $100 - 29.29\% = 70.706\%$  and so on until it reaches 65% which is the regulatory norm limit for this type of cement. The annual baseline clinker share for all of the project activity cement types have been calculated like this.

The DOE would like to highlight here that there is a contradiction between the text mentioned in the applied methodology and the equation provided (p-10). The exact text and the formula are reiterated below:

"Update the benchmark annually based on 2% default increase in the share of additives (i.e. decreasing share of clinker) up to the limit of the regulatory/product norm in the region/national market.

$B_{Blend,y} = B_{Blend,1} \times (1 - 0.02)^Y$  till  $B_{Blend,y}$  reaches the limit of the regulatory/product norm in the region/national market for the share of clinker in the cement type."

The method opted to calculate /update the value of baseline benchmark of share of clinker per tonne of BC for each year is based on the text provided by the applied meth and not the provided equation. This approach also yields a conservative value and hence acceptable to the validation team. Validation team also wish to submit that since the calculation is based on the text provided in the applied methodology, this can not be considered as deviation from the applied methodology.

PDD consists of all data and assumptions with their respective verifiable references. DOE has verified those values from the sources and confirms that the values used in emission reduction calculations are conservative and accurate. The equations for emission reduction calculations have been applied correctly as per ACM 0005 version 07 /B02xx/. This was validated by review of the detailed spreadsheet calculations<sup>/B02/</sup> and therefore the estimated emission reductions are plausible and conservative.

In detail, the following is confirmed with regard to:

### A. Calculation of the grid emission factor:

The Ethiopian grid is predominantly dominated by the Hydro based power plants. Relevant input data for the calculation of the grid emission factor are the amount of fuel used by the Ethiopian power plants and the respective NCVs/Emission Factors as well as the net electricity generation. The Ex-ante combined margin grid emission factor from three years data has been made available to DOE<sup>/20/</sup>. The emission factor is also calculated by DNA supported by the Austrian Government<sup>/B14/ & /B15/</sup> is 0.00591tCO<sub>2</sub>/MWh.

The value of 0.00591tCO<sub>2</sub>/MWh. has been calculated as below



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=50% Operating Margin+ 50% Build Margin

=50%\*.0071554+50%\*.00467= 0.00591 tCO<sub>2</sub>/MWh ( Treated as negligible. Hence BE<sub>Ele,grid,CLNK</sub>=0 for ex-ante calculation only)

EF<sub>s,g,y</sub>, will also be determined in each crediting year.

## B. Calculation of Emission Reductions

Relevant input, data, which are clearly stated and referenced in the PDD and the Emission reduction calculation spreadsheet<sup>22</sup>, for the calculation of emission reductions are

Baseline scenario:

- Consumption of fossil fuels for the kiln process and the respective NCVs as well as emission factors
- Raw meal input for the clinker production and its chemical composition (InCaO, InMgO)
- Clinker and Cement production and its chemical composition (OutCaO, OutMgO)
- Electricity consumption by plant and grid emission factor.
- Self Generated electricity is taken as 0 for ex-ante emission reduction estimation Nil—as there is no captive unit installed at the project site

Project scenario:

- Monitoring of the above mentioned values during the project activity
- Monitoring of additives/clinker in the cement
- Monitoring of additional fossil fuel consumption for the transportation of additives
- Estimation of additional electricity consumption for transportation, preparation and blending of additives
- Measurement of self generated Electricity, quantity and type of fuel used for self generation of electricity

Validation team verified during on site visit that the cement plant is already connected to the national grid for obtaining all of its power and the power purchase agreement has been produced by PP to DOE. PP has established that the cement plant does not generate electricity of its own except in an emergency situation and even in such cases only emergency back-up diesel generator is ready to switch on. The emergency back-up generator installed on site is one unit of 1701 kW diesel generator only. This cannot run the cement plant designed to receive a 345 MVA power supply. . Since it is a greenfield project there is no emissions determined in the baseline scenario, However the actual monitored value in each crediting year will be used in calculating project emission. EF<sub>s,g,y</sub>, will also be determined in each crediting year..

Validation team based on review of revised PDD confirms that the revised PDD mentions all parameters required to calculate emission on the account of self generated electricity (i.e. the DG set) and also mention methodological equations in section B.6.1 of the revised PDD. EF<sub>s,g,y</sub>, will also be determined in each crediting year.

All input values from historical records/publicly available sources were revised by the validation team and deemed plausible, appropriate and applicable to the project activity. They will lead to a conservative estimation of emission reductions.

All estimations for ex-ante values to be monitored during the project activity are assessed to be appropriate, to reflect the current planning of the plant and lead to conservative estimations of emission reductions

### 3.5.4 Leakages:

<sup>3</sup> Feasibility report (TEFR) of the project section 5.10.

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Leakage emissions due to transport of additional additives in year y (LETR,y) are calculated applying the latest approved version of the methodological tool "Project and leakage emissions from road transportation of freight <sup>/B07/</sup>. Since the project has been awarded the exclusive rights of mining in the designated areas and there is no existing cement plant present to share additives hence leakage from diversion of additives is not considered.

The values applied are taken either out of internal plant records/ publicly available default values from IPCC/B09/.

All estimations for ex-ante values are assessed to be appropriate, to reflect the current planning of the plant and lead to conservative estimations of emission reductions.

## 3.6 Additionality

The project is a large scale project. Therefore, in accordance with ACM0005 <sup>/B03/</sup>, the additionality of the project has been demonstrated based on the valid version of the "Tool for demonstration and assessment of additionality (Ver 06.1.0) <sup>/B03/</sup>.

### 3.6.1 CDM consideration

The Start date of the activity is 14/08/2009 which is the date of first major payment toward purchase of equipment <sup>/02/</sup> for the project facility which is in line with CDM Glossary of terms version 6 <sup>/B11/</sup>; Validation of serious consideration of CDM was carried out through following evidences.

Since this project activity is a new project activities with a starting date on or after 2 August 2008: PP have notified the Host Party DNA and the UNFCCC on 09.11.2009 which is within six months of the project activity start date. UNFCCC confirmed the receipt of intimation on 17<sup>th</sup> November 2009. Since the project was waiting for the "CDM Loan Scheme" and also for a revision in the methodology ACM005, there was a delay in start of the validation. Keeping in view of the guidance of paragraph 5 Annex 13 of EB 62. PP informed the UNFCC Secretariat seeking extension to the notification regarding its intention for CDM application' UNFCCC Secretariat acknowledged & confirmed the extension on 17th November 2011 <sup>/22/</sup>

The confirmation for receipt of information has been confirmed by DNA and through UNFCCC website<sup>/34/</sup> <http://cdm.unfccc.int/Projects/PriorCDM/notifications/index.html>

In conclusion, in accordance with the requirements of the VVS<sup>/B01/</sup>, Carbon Check can confirm that the CDM was considered seriously in the decision to implement the project activity. Refer CL-4

### 3.6.2 Identification of Alternatives

Since the Project proposes to manufacture three types of BC <sup>/13/,18/,19/</sup> the identification of alternatives has been carried out for each type

I. Output 1: Blended Cement Type CEM II / B-P

**Alternative a;** the project activity undertaken without being registered as a CDM project activity

**Alternative b;** other realistic and credible alternative scenarios (s) to the proposed CDM project activity scenario that deliver this output or cement of comparable quality i.e. import or production of Portland cement

**Alternative c;** Continuation of the current production practice of this type of cement in manufacturing plants of other private cement project developers i.e. the continuation of production as per the current blending / clinker share practice of this cement type in other private cement plants in the host country

Carbon check confirms that the above three alternatives are consistent with all applicable mandatory laws and regulations.

II. Output 2, 3 respectively: Blended Cement Types CEM II/B-L and CEM IV / B

**Alternative a;** the project activity undertaken without being registered as a CDM project activity



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**Alternative b;** other realistic and credible alternative scenarios (s) to the proposed CDM project activity scenario that deliver this output or cement of comparable quality i.e. import or production of Portland cement

**Alternative c;** Continuation of the current production practice of this type of cement in manufacturing plants of other private cement project developers i.e. the continuation of production as per the current blending / clinker share practice of this cement type in other private cement plants in the host country A

Alternative (c) is not available, as there is no plant in the host country including the government owned produce these outputs in the host country and hence eliminated.

Alternatives (a) and (b) are consistent with all applicable mandatory laws and regulations.

## 3.6.3 Barrier Analysis

The assessment of the barriers as demonstrated in the PDD /01/ is summarized below:-

### A) Investment Barrier (Access to Capital)

The DOE validated through that all of the cement plants erected recently (around the assessment period) were private owned and were producing Ordinary Portland Cement OPC only i.e. with clinker contents greater than 95%. Blending requires integrated plants and establishing an integrated cement plant entails high capital expenditure and operation costs would require a source of finance. In the absence of a capital market it will always provide significant hurdle that private PP face or even impossibility to raise the required Finance/Capital.

PP has provided evidence that there is no Moody's, S&P or Fitch rating for the host country which is commonly used by private equity investors for measuring hurdle rates when they wish to invest (equity or other) on a certain project in a country. In the absence of such rating, private capital investors would have less information on risk or simply would assume it is risky. There is no structured capital market exist in Ethiopia through which the capital for such projects can be sourced<sup>/B12//B13//1B4/and /B15/</sup>. This is also validated through Market Potential Assessment and Road Map Development for the Establishment of Capital Market in Ethiopia- Ruediger Ruecker<sup>/B18/&/B19/</sup>

DOE further validated above with the information in public domain. A published report named "Ethiopian Economic fallacy Normal Growth and real poverty"<sup>/B22/</sup> which states "*Deliberate monopolistic government policies and high entry costs have prevented domestic private investors from entering into the manufacturing, finance, and communication sectors.*"

### B) Technology Barriers

#### Technology barrier due to Scale

Derba is a largest investment in the private sector in the field of cement manufacturing. This was validated through information available in public domain viz. Somalian Press report<sup>/B16/</sup>

#### Technology Barrier due to technical complexity:

Review of Purchase order raised on technical Consultant and order Erection and supply of equipment paced. The complete consultancy for the project was carried out by an Indian Company<sup>/31/</sup>. The award for supply of machinery, erection & commissioning was carried out by Chinese company CNBN. This was further validated through Barriers to ecommerce in developing countries -Japhet E. Lawrence.& Usman A. Tar<sup>/B17/</sup>

### C) Manpower Barrier

A significant number of Chinese workers are managing the Operation & maintenance of the plant The consultancy & TEFR study was also carried out by a foreign company. Carbon check Confirms that there is a scarcity of skilled manpower in Ethiopia to operate and maintain the plant.

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## D) Barrier due to prevailing Practise – “ First of its Kind

Carbon check confirms the following:

The project plant is Greenfield Plant in the private sector and hence implements Blended cement for the first time (is not increasing clinker share from historical value).

As per “GUIDELINES ON ADDITIONALITY OF FIRST-OF-ITS-KIND PROJECT ACTIVITIES (Version 01.0)” Para 5; A proposed project activity is the First-of-its-kind in the applicable geographical area if:

- (a) The project is the first in the applicable geographical area that applies a technology that is different from any other technologies able to deliver the same output and that have started commercial operation in the applicable geographical area before the start date of the project;

DOE was able to confirm that the existing Government plants were established in a different investment environment (early and late 1980's) and were established with Government capital funding. The “Tool for the Demonstration and assessment of Additionality” version 07.0.0 under Para 20 footnote 5, describes the relevance of taking the identity of the project developer (investor) into account when establishing alternative scenarios of delivering a product, towards assessing. Hence private plants were only considered.

In the revised PDD, the demonstration of FOIK is further elaborated in order to establish FOIK by diffusion of technology (as stated on p 5/36 of methodology). In this regard PP has used percentage statistics of cement produced by private plants in the host country versus cement produced by all plants in the host country, since the PO is a private operator. The percentage of blended cement produced by all private plant owners in the host country in preceding three years i.e. in 2006 it was 0% as there was no private plant in Ethiopia, in 2007 it was 1% and in 2008 it was 3.66% of the total cement produced in the host country.

Hence Carbon Check concludes that the project meets the criteria of first of its kind and complies with the guidance of First of its Kind stated in the methodology ACM 0005 version 07

Carbon Check further verified that the project is twice the size of any cement project (Annual Capacity in private sector in Ethiopia In April 2008 /13/,18/,19/,22/,B20/,-

**Different Technology Measure:-** Project has plans to produce to BC of types which have never been produced in Ethiopia before

- Type CEM II B-P: - The lowest current clinker % of cement produced in Ethiopia of this type is 71.28% .The Project plans to produce this type of cement with 65% clinker contents which is permissible by Ethiopian Cement Standard ES 1177-1-2005.
- Type CEMII/A-L & CEMIV/B have never been produced in Ethiopia. This has been validated through statistics collected by Government of Ethiopia

Carbon Check confirms through the production data of all private cement plants that the total quantity of CEM II B-type produced by Private plants in the year 2007 & 2008 is 1.0% & 3.6% respectively and average (2 years) is 1.8%. In all cases the value of CEM II B type cement produced in Ethiopia is less than 5%./B18/&B19/\_& /B22/

The choice of the crediting period selected is 10 years with no option of renewal

Hence Carbon Check confirms that the project meets the criteria of First of its Kind as stated in EB 69 Annex 20 .

Barrier	PDD-Description	Validated through
A) Investment Barrier • Access to	There is no private domestic capital market. Accessing finance from International market is	<del>_____The DOE validated through that all of the cement plants erected recently (around the assessment period) were private owned and were producing Ordinary Portland Cement OPC only ie with</del>

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Capital	also sensitive to rating of a host country, i.e. there has never been Moody's, S&P or Fitch rating for the host country	<p><del>clinker contents greater than 95%. Blending requires integrated plants, and establishing an integrated cement plant entails high capital expenditure and operation costs would require a source of finance. In the absence of a capital market it will always provide significant hurdle that private PPs face or even impossibility to raise the required Finance/Capital.</del></p> <p><del>PP's have already provided evidence that there is no Moody's, S&amp;P or Fitch rating/xx/ for the host country which is commonly used by private equity investors for measuring hurdle rates when they wish to invest (equity or other) on a certain project in a country. In the absence of such rating, private capital investors would have less information on risk or simply would assume it is risky. There is no structured capital market exist in Ethiopia through which the capital for such projects can be sourced. <sup>/B12/,/B13/,/B14/ and /B15/</sup>. This is also validated through Market Potential Assessment and Road Map Development for the Establishment of Capital Market in Ethiopia- Ruediger Ruecker, <sup>/B18/&amp;/B19/</sup>.</del></p> <p><del>DOE further validated above with the information in public domain. A publicised report named "Ethiopian Economic fallacy Normal Growth and real poverty" <sup>/B22/</sup> which states "Deliberate monopolistic government policies and high entry costs have prevented domestic private investors from entering into the manufacturing, finance, and communication sectors."</del></p> <p><del>There is no structured capital market exist in Ethiopia through which the capital for such projects can be sourced. <sup>/B12/,/B13/,/B14/ and /B15/</sup>. This is also validated through Market Potential Assessment and Road Map Development for the Establishment of Capital Market in Ethiopia- Ruediger Ruecker, <sup>/B18/&amp;/B19/</sup>.</del></p>
B) Technology Barriers		
Technology barrier due to <sup>4</sup> Scale	Largest production capacity in Ethiopia	Derba is a largest investment in the private sector in the field of cement manufacturing. This was validated through information available in public domain viz. Somalian Press report <sup>/B16/</sup>
<sup>5</sup> Technology Barrier due to technical complexity:	The plant feasibility, Design Manufacturing erection as well as implementation supervision is performed by a foreign entity. Including for	Review of Purchase order raised on technical Consultant and order Erection and supply of equipment paced The complete consultancy for the project was carried out by an Indian Company <sup>/31/</sup> . The award for supply of machinery, erection & commissioning was carried out by Chinese company CNBN. This was further validated through Barriers to

<sup>4</sup> As observed from table 010 and the project production plan under Appendix 4

<sup>5</sup> Contract documents with Technology supplier and Feasibility consultant

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	<p>maintenance &amp; operation of the plant for further duration.</p>	<p>ecommerce in developing countries Japhet E. Lawrence, &amp; Usman A. Tar,<sup>B17/</sup></p>
<p>C) Manpower Barrier</p>	<p>There is significant shortage of skilled cement manpower in the host country as demonstrated by hiring of foreign consultants for operation management as well as training interns entirely new to the cement market.</p>	<p>A significant number of Chinese workers are managing the Operation &amp; maintenance of the plant. The consultancy &amp; TEFR study was also carried out by a foreign company. Carbon check Confirms that there is a scarcity of skilled manpower in Ethiopia to operate and maintain the plant.</p>
<p>D) Barrier due to prevailing Practise "First of its Kind"</p>	<p>(A) As per ACM 0005 Version 07 "Only projects implementing blended cement projects for the first time are allowed to claim this barrier (i.e. project participants who are increasing the percentage of additives from a historical value to a higher value are not allowed to use this barrier). The project plant is Greenfield and hence implements Blended cement for the first time (is not increasing clinker share from historical value).</p> <p>(B) The project complies with "First of its kind" requirement of Tool for demonstration of additionality Version 06 "for the following reasons</p>	<p>Carbon check confirms the following</p> <p>The project plant is Greenfield Plant in the private sector and hence implements Blended cement for the first time (is not increasing clinker share from historical value).</p> <p>As per "GUIDELINES ON ADDITIONALITY OF FIRST-OF-ITS-KIND PROJECT ACTIVITIES (Version 01.0)" Para 5: A proposed project activity is the First-of-its-kind in the applicable geographical area if:</p> <p>The project is the first in the applicable geographical area that applies a technology that is different from any other technologies able to deliver the same output and that have started commercial operation in the applicable geographical area before the start date of the project; and DOE was able to confirm from that the existing Government plants were established in a different investment environment (early and late 1980's) and were established with Government capital funding. The "Tool for the Demonstration and assessment of Additionality" version 07.0.0 under Para 20 footnote 5, describes the relevance of taking the identity of the project developer (investor) into account when establishing alternative scenarios of delivering a product, towards assessing. Hence private plants were only considered</p> <p>PP's went further miles out of the FOIK Guideline, in establishing FOIK by diffusion of technology as stated on page 5/36 of methodology. In such respect PP's have used percentage statistics of cement produced by private plants in the host country versus</p>

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	<p>(i) The total volume of cement (output) produced by the project activity, would be twice larger (&gt;+100%) than the production capacity of the biggest plant in the host country. Hence the project activity is Large Scale and therefore first of its kind.</p> <p>(ii) Different technology (by feedstock): According to paragraph 8(b) of the tool, the technology can be FOIK based on feedstock</p> <p>(ii) The project plant produces type CEMII/A-L and CEMIV/B for the first time in the host country. It will also produce type CEMII/B-P at an additive share level for the first time in the host country</p> <p>(iii) Diffusion of Technology:- The total quantity of CEM II B-type produced by Private plants in the year 2007 &amp; 2008 is 1.0% &amp; 3.6% respectively and average (2 years) is 1.8%. In all cases the value of CEM II B type cement produced in Ethiopia is less than 5%.</p> <p>(iv) The choice of crediting period is 10 years</p>	<p><del>cement produced by all plants in the host country, since the PO is a private operator. The percentage of blended cement produced by all private plant owners in the host country in preceding three years i.e. in 2006 it was 0% as there was no private plant in Ethiopia, in 2007 it was 1% and in 2008 it was 3.66% of the total cement produced in the host country,</del></p> <p><del>Hence Carbon Check concludes that the project is meets the criteria of first of its kind and complies with the guidance of First of its Kind stated in the methodology ACM 0005 version 07.</del></p> <p><del>Carbon Check verified that The project is twice the size of any cement project (Annual Capacity in private sector in Ethiopia In April 2008 -/13/18/19/22/B20/-</del></p> <p><del>Different Technology Measure:- Project has plans to produce to BC of types which have never been produced in Ethiopia before</del></p> <ul style="list-style-type: none"> <li><del>Type CEM II B-P:- The lowest current clinker % of cement produced in Ethiopia of this type is 71.28%. The Project plans to produce this type of cement with 65% clinker contents which is permissible by Ethiopian Cement Standard ES 1177-1-2005.</del></li> <li><del>Type CEMII/A-L &amp; CEMIV/B Have never been produced in Ethiopia. This has been validated through statistics collected by Government of Ethiopia</del></li> </ul> <p><del>Carbon Check confirms through the production data of all private cement plants that the total quantity of CEM II B-type produced by Private plants in the year 2007 &amp; 2008 is 1.0% &amp; 3.6% respectively and average (2 years) is 1.8%. In all cases the value of CEM II B type cement produced in Ethiopia is less than 5% -/B18/&amp;B19;- &amp; /B22/</del></p> <p><del>The choice of the crediting period selected is 10 years with no option of renewal</del></p> <p><del>Hence Carbon Check validates that the project meets the criteria of First of its Kind as stated in EB</del></p>
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		<p><a href="#">69-Annex 20</a></p> <p>Carbon Check verified that The project is twice the size of any cement project (Annual Capacity in private sector in Ethiopia In April 2008- /13/,/18/,/19/,/22/,/B20/-</p> <p>Different Technology Measure: Project has plans to produce to BC of types which have never been produced in Ethiopia before</p> <p>Type CEM II B-P: - The lowest current clinker % of cement produced in Ethiopia of this type is 71.28%. The Project plans to produce this type of cement with 65% clinker contents which is permissible by Ethiopian Cement Standard ES 1177-1-2005.</p> <p>Type CEMII/A-L &amp; CEMIV/B Have never been produced in Ethiopia. This has been validated through statistics collected by Government of Ethiopia</p> <p>Carbon Check confirms through the production data of all private cement plants that the total quantity of CEM II B-type produced by Private plants in the year 2007 &amp; 2008 is 1.0% &amp; 3.6% respectively and average (2 years) is 1.8%. . In all cases the value of CEM II B type cement produced in Ethiopia is less than 5%-/B18/&amp;/B19/- &amp; /B22/</p> <p>The choice of the crediting period selected is 10 years with no option of renewal</p> <p>Hence Carbon Check validates that the</p>
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		project meets the criteria of First of its Kind as stated in EB 69 Annex 20
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**Note:** While assessing the above barriers DOE has considered the “Guidance lines-7 of “Guidelines for objective demonstration of Barriers and assessment of barriers” version 01 which states “For projects in Least Developed Countries, it is sufficient to transparently describe the relevant barriers, as less stringency is needed with regards to data availability in the actual demonstration of barrier, as compared to the projects in other countries. Projects in Least Developed Countries are not bound by the provisions in this guideline and may use other approaches that are more adapted to the local circumstances.” It further gives the rationale as follows: - “Rationale: Projects in Least Developed Countries can be assumed in general to face significant barriers to their implementation. At the same time, data availability in these countries is considerably limited which complicates the demonstration of Additionality and therefore further increases transaction costs.”

PP has demonstrated established that the revenue from the CDM would at least alleviate investment barrier and also a portion of operating expenses incurred on foreign experts’ serving as source of foreign currency. DOE validated this through site visit where foreign experts were witnessed operating the plant. Ethiopia has a very marginal foreign exchange reserves and the exchange ratio and the same were validated through the information available in the public domain. <http://www.ethiopianreview.com/content/2628>

It can be confirmed that CDM alleviates the claimed barriers to the new blended cement produced under the project activity, to a level that the project is not prevented anymore from occurring by such barrier.

## Conclusion:-

In the above background Validation team concludes that the Project is additional as it faces real and prohibitive barriers and “First Of its kind”

### 3.6.4 Investment Analysis

The Project is demonstrating Additionality through Barriers.

### 3.6.5 Common Practise Analysis

As per additionality tool “Unless the proposed project type has demonstrated to be first-of-its kind (according to Sub-step 3a), and measures different from those listed in paragraph 6 the above generic additionality tests shall be complemented with an analysis of the extent to which the proposed project type (e.g. technology or practice) has already diffused in the relevant sector and region. This test is a credibility check to complement the investment analysis (Step 2) or barrier analysis (Step 3).”

PP has demonstrated the subject project as FOIK, assessed as above; hence demonstration of common practice analysis is not required, and hence acceptable to the validation team.

## Conclusion

In the above background, Validation Team concludes that the project is not a business-as-usual scenario and is additional.

Carbon Check confirms that all data, rationales, assumptions, justifications and documentation provided by the project participant(s) to support demonstration of additionality are credible and reliable.

In conclusion, the proposed project activity complies with all criteria of “Tool for the demonstration and assessment of additionality”, the applied methodology and the proposed project is additional



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## 3.6.6 Monitoring Plan

Referring to paragraphs 131 – 133, VVS version 02.0.

The approved baseline and monitoring methodology “ACM0005 version 07.1.0 “Increasing the blend in cement production.” has been applied correctly.

The monitoring plan is in accordance with the monitoring methodology; the monitoring plan will give opportunity for real measurement of achieved emission reductions.

Carbon Check has verified all the parameters presented in the monitoring plan against the requirements of the methodology and concludes that no deviations relevant to the project activity have been found.

Carbon Check confirms that the monitoring arrangements described in the monitoring plan are feasible within the project design, and the means of implementation of the monitoring plan are sufficient to ensure the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex post and verified.

Carbon Check has verified all the parameters presented in the monitoring plan against the requirements of the methodology and concludes that no deviations relevant to the project activity have been found.

Carbon Check confirms that the monitoring arrangements described in the monitoring plan are feasible within the project design, and the means of implementation of the monitoring plan are sufficient to ensure the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex post and verified.

## 3.6.7 Parameters determined Ex-Ante

[Carbon Check CC](#) confirms that ex ante parameters as detailed below are in line with ACM0005 version 07.1.0 “Increasing the blend in cement production.”

- ✓  $EF_{grid\_BSL}$  =  $EF_{grid\ y}$  Baseline grid Emission factor
- ✓  $B_{Blend,y}$  Baseline benchmark of share of clinker per tonne of BC updated for year  $y$
- ✓  $EFF_{Coal}$  Emission factor for coal
- ✓  $FF_{i,BSL}$  Fossil fuel of type  $i$  consumed for clinker production in the base year
- ✓  $CLNK_{BSL}$  Annual production of clinker in the base year
- ✓  $OutMgO$  Baseline MgO content in Clinker
- ✓  $OutCaO$  Base year CaO content in Clinker
- ✓  $D_{f,m}$  Return trip road distance between the origin and destination of freight transportation activity  $f$  in monitoring period  $m$  (km)
- ✓  $EFCO2,f$  Default CO2 emission factor for freight transportation activity  $f$  (g CO2 / t km)  $BC_y$  BC produced and sold in the domestic market in year  $y$  (t BC)

(The ex-ante parameters where value has been taken as ‘0’ are not included above)

## 3.6.8 Parameters determined Ex-Post

[Carbon Check CC](#) confirms that parameters as detailed below will be monitored at planned intervals and are in line with “ACM0005 version 07.1.0 “Increasing the blend in cement production.”



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- ✓  $Q_{rm}$  Quantity of clinker raw material used in the base year
- ✓  $CLNK_{BSL}$  Annual production of clinker in the base year
- ✓  $FF_{i,BSL}$  Fossil fuel of type  $i$  consumed for production of clinker in the base year
- ✓  $InCaO$  Baseline non-carbonated CaO content in the raw material in the base year
- ✓  $InMgO$  Baseline non-carbonated MgO content in the raw material in the base year
- ✓  $OutCaO$  Baseline non-carbonated CaO content in the raw material in the base year
- ✓  $OutMgO$  Baseline non-carbonated MgO content in the raw material in the base year
- ✓  $BC_{BSL}$  Annual production of BC in the base year
- ✓  $BC_y$  BC production in year  $y$
- ✓  $P_{Blend,y}$  Share of clinker per tonne of BC in year  $y$
- ✓  $Q_{rm,y}$  Quantity of clinker raw material used in year  $y$
- ✓  $CLNK_y$  Clinker production in year  $y$
- ✓  $FF_{i,y}$  Fossil fuel of type  $i$  consumed for clinker production in year  $y$
- ✓  $EFF_i$  Emission factor of Fossil fuel of type  $i$  consumed for clinker production in year  $y$
- ✓  $ADD_y$  Amount of Additives used for BC production in project plant in year  $y$
- ✓  $ADD_{NS,y}$  Amount of Additives for which the project participants could not substantiate that they are surplus in year  $y$
- ✓  $A_{PJ,blend,y}$  Share of additives per tonne of BC in year  $y$
- ✓  $A_{BSL,blend,y}$  Baseline Share of additives per tonne of BC in year  $y$
- ✓  $Q_{ADD,y}$  Quantify of additional additives transported in year  $y$  (t additives).
- ✓  $D_{f,m}$  Return trip road distance between the origin and destination of freight transportation activity  $f$  in monitoring period  $m$  (km)

## Management system and quality assurance

The project's monitoring plan includes:

- A description of the responsibilities and authorities for project management;
- Procedures for training;
- Procedures for the calibration of metering equipment;
- Monitoring organisation chart & procedure for parameters listed in 3.7.2;
- Data quality control;
- Quality assurance and quality control;
- Data management system;
- Reporting and verification.

Detailed procedures have been elaborated in the PDD /01/. These will be maintained and implemented to enable subsequent verification of emission reductions.

The application of the monitoring methodology is transparent and Carbon Check considers the project participants able to implement the monitoring plan.

In Carbon Check's opinion the project participant's ability to implement the monitoring plan is adequate in order to measure and demonstrate its compliance as per the applied methodology.

## 3.7 Sustainable Development

The host party's DNA has confirmed the contribution of the project to the sustainable development in Federal Democratic Republic of Ethiopia according to the Letter of Approval for the Project /24/, which was checked by the validation team to be valid.

The project activity is in compliance with all current applicable legislations.

In conclusion, the Validation Team is of the opinion that the project activity is in full compliance with all applicable requirements for the CDM by leading to emission reductions additional to what would have otherwise occurred, providing for reliable and measurable emission reductions with sustainable development in the country through improvement of environmental condition, reduction of air pollutants.

## 3.8 Environmental Impacts

Referring to paragraphs 134 – 137, VVS version 02.0

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The Environmental Impact Assessment (EIA) of the proposed project was carried out in accordance with the country's legislation. A comprehensive "Environmental & Social impact assessment"<sup>/10/</sup> has been carried out for the Greenfield facility.

The potential environmental impacts on Air, noise, waste water, water and solid waste, etc. have been sufficiently identified in the PDD<sup>/01/</sup>. Carbon Check is convinced that environmental management system shall be deployed to control and mitigate environmental impacts expected from the project activity.

## 3.9 Local stakeholder's consultation

Referring to paragraphs 138 – 140, VVS version 02.0

Project consultant Holtec Consulting Private Limited has facilitated a detailed local stakeholder consultation under the requirement of Ethiopian Law for the Greenfield plant. A detailed comprehensive stakeholder consultation was carried out through various meeting conducted in the month of August 2007.

Stake holders were invited at the Federal and Regional levels, and included the following: \_

- a) Federal Environment Protection Authority
- b) Regional Environment Protection Authority
- c) Ministry of Water Resources
- d) Ministry of Agriculture
- e) Ministry of Mines
- f) Oromiya Regional Government
- g) Wereda Administrative Offices

The contents of Stakeholder consultation were compiled in a report "Public Consultation report Chapter-7"<sup>/28/</sup> was submitted to DOE for validation

The stakeholder comments raised on the on following primary issues: \_

- Broader aspects of TEFR ,
- Carbon Financing , CDM, Emission reduction Programme
- Education & Health programmes
- Minimising air & water pollution
- Generation of employment
- Community development fund

Validation team reviewed all relevant information of local stakeholder consultation meeting <sup>/13/</sup> and confirms that the LSC meeting meets to the requirement of § 138 of VVS, ver 02 <sup>/B01/</sup>. The validation team confirms that the process for conducting the local stakeholders meeting is adequate and credible.

## 4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

The PDD version 02, 30/11/2011 was made publicly available on the CDM UNFCCC website (<http://cdm.unfccc.int/Projects/Validation/DB/KSQLVGL4WQBRFR86VA1CGWVC4ZBS1Q/view.html>) and Parties, stakeholders and NGOs have been invited through the CDM website (to provide comments during a 30 days period from 29/12/2011 to 27/01/2012. Following comments were received during the period.

Global stakeholder Comment	PP response	Response by DOE
Is the project equipment purchased second hand equipment or sourced from cheap foreign sources? If yes, the issue must be probed by DOE since invoices will invariably be inflated and forged. Total project costs mentioned by PP will not be the same as originals. Hence no Additionality. These facts must be probed in full by DOE by checking	Project is a Greenfield investment with Equipment acquired through newly design and supply under turnkey (EPC) contract.	Project equipment is new and not a second hand. DOE has validated all input values used in Investment analysis through evidences listed in the report.

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all documents and money transactions along with bank statements and certified accounts by a legally acceptable financial analyst.		
From DOE side which auditor has done marketing and business development for acquiring this business of validating this project? With whom he or she was Co-coordinating at PP or CER buyer? The same person who has done the marketing and business development to acquire the business do validation or participate in any manner what so ever in the validation process? One cannot do like that. It is against the accreditation rules and norms followed since ages. DOE should send auditors from different offices or countries to do this validation audit. DOE must take care of impartiality and accreditation rules. Due to the targets set by the DOE managements auditors are doing marketing and meeting clients and giving promises that the project will be taken care. Is it acceptable and fair? This must be stopped. No auditor should do marketing. Only non-auditing staff should do marketing. DOE to ensure the same please.	DOE to respond	DOE confirms that Business development team and Validation team were entirely different. DOE has used auditors from other country to carry out this validation.
If applicable only: Is these machines, equipment was a part of any bundle of CDM activity envisaged and developed earlier. DOE to check the same through independent sources also. Once some bundles are non-additional and getting negative validation from a DOE, PP is rolling out the same project as an individual project which is not a CDM project at all. DOE to verify the same from independent sources and also take undertaking in the form of an affidavit from the PP's that any misrepresentation or false statement with respect this would attract strict legal action from UNFCCC and DOE. Furthermore the registered project must be de-registered in case of any future findings contradicting the submissions made by the project owner.	Not applicable	Carbon Check confirms that this Project is a standalone project and not a part of any bundled project. This is validated in line with VVS 02.0 Paragraph 64 & 65
DOE to ensure that the PDD values are consistent and ensure that the	<ul style="list-style-type: none"> <li>DOE to respond</li> </ul>	DOE has validated all input values used in

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CDM project is a genuine project	<ul style="list-style-type: none"> <li>Also already covered in the closed CARs and CLs.</li> </ul>	PDD through evidences listed in the report and confirm that they are consistent.
DoE to check the Detailed Project Report and Feasibility Report which is submitted to the other agencies and Banks by Project owner and ensure that the values match with the DPR/FR submitted to DoE also.	<ul style="list-style-type: none"> <li>DOE to respond</li> <li>ESIA document in the following link shows the project details submitted to DOE are same as those submitted to banks.</li> </ul> <p><a href="http://www.ifc.org/ifcext/spiwebsite1.nsf/ProjectDisplay/ESRS26410">http://www.ifc.org/ifcext/spiwebsite1.nsf/ProjectDisplay/ESRS26410</a></p>	The FSR submitted to DOE has been validated in Line VVS Version 02
Careful study must be done so that the DPR/FR is not in different versions made and submitted with different purposes to different agencies, which is totally unacceptable, illegal and unethical.	<ul style="list-style-type: none"> <li>DOE to respond</li> <li>ESIA document in the following link shows the project details submitted to DOE are same as those submitted to the bank(s).</li> </ul> <p><a href="http://www.ifc.org/ifcext/spiwebsite1.nsf/ProjectDisplay/ESRS26410">http://www.ifc.org/ifcext/spiwebsite1.nsf/ProjectDisplay/ESRS26410</a></p>	Same as above
DPR/FR values must be probed fully. DOE must take a written undertaking from the PP/Consultant about the list of parties to whom this DPR/FR is submitted and for what purposes. Then DOE should cross check with all the parties and confirm that the same DPR/FR is submitted to all the parties correctly without any changes. DOE must not accept any reports and undertakings from PP/Consultant. DOE must make independent evaluation and use totally different parties without informing the PP or Consultant to cross check the facts.	<ul style="list-style-type: none"> <li>Techno Economic Feasibility Report (TEFR) submitted for accessing loan from IFC, EIB, AfDB and DBE.</li> <li>ESIA document in the following link shows the project details submitted to DOE are same as those submitted to the bank(s).</li> </ul> <p><a href="http://www.ifc.org/ifcext/spiwebsite1.nsf/ProjectDisplay/ESRS26410">http://www.ifc.org/ifcext/spiwebsite1.nsf/ProjectDisplay/ESRS26410</a></p>	Same as above
DOE to write to the party who prepared the DPR/FR which is submitted to the banks and other agencies and the same is verified against the one submitted to the DOE by PP/Consultant.	<ul style="list-style-type: none"> <li>DOE to respond</li> <li>ESIA document in the following link shows the project details prepared by the party who prepared them and submitted to banks are same as those</li> </ul>	Same as above

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	submitted to DOE.  <a href="http://www.ifc.org/ifcext/spiwebsite1.nsf/ProjectDisplay/ESRS26410">http://www.ifc.org/ifcext/spiwebsite1.nsf/ProjectDisplay/ESRS26410</a>	
DOE must not entertain this project any more if found the DPR/FR is tampered with at any point in time. PP cannot give different DPR's and FR's. They must submit only the one given to Banks and other agencies while obtaining loans and decision making time.	<ul style="list-style-type: none"> <li>• DOE to respond</li> <li>• ESIA document in the following link shows the project details prepared by the party who prepared them and submitted to banks are same as those submitted to DOE.</li> </ul> <a href="http://www.ifc.org/ifcext/spiwebsite1.nsf/ProjectDisplay/ESRS26410">http://www.ifc.org/ifcext/spiwebsite1.nsf/ProjectDisplay/ESRS26410</a>	Same as above
How is the base line defined in this project? Is Base line hypothetically defined with no proper evidences and proper justification? In such case, DOE cannot take the base line as suggested by the PDD. Please check that there are real emission reductions beyond the real and factual base line. It may so happen that this project qualifies for no CER's. DOE cannot assume values and things as giving by this PP. Whatever values are considered throughout the project in all documents including the real DPR (not the one prepared for CDM, the one given to the banks and others), they must be validated, verified and double checked. Do not ask PP for DPR. Ask the parties who have been given DPR by the PP. Get directly from the bank and others by each page of the DPR and Feasibility report signed. Such document can be considered as a real DPR or FR. UNFCCC CDM process cannot be degraded by fabricating and misinterpreting the project base line and Additionality.	Baseline developed using the guideline in the approved methodology ACM0005 V7.4.1 and proper evidences and justifications provided to DOE.	Baseline has been validated as per ACM00005 Version 07.1.0 and in line with VVS version 02.(Paragraph 88-93)
DOE to be more careful so that this is a genuine CDM project. What is the exact project cost? The project cost is covering what? Each value considered must be validated with proof. The machinery is second hand purchased or fresh and new	<ul style="list-style-type: none"> <li>• DOE to respond</li> <li>• The project total cost can be seen on</li> </ul> <a href="http://www.ifc.org/ifcext/spiwebsite1.nsf/0/E3F4305FC37F09AE8">http://www.ifc.org/ifcext/spiwebsite1.nsf/0/E3F4305FC37F09AE8</a>	DOE has validated all input values used in PDD through evidences listed in the report and confirm that they are consistent.

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<p>from an OEM? In either case DOE to check all the quotations, proposals, purchase orders, invoices, way bills, transport bills, proof of payments like bank statements. DOE to check with banks by way of written confirmation the amount transacted, to whom the money is paid, when the money is paid, is the party paid is the correct party as shown in the purchase orders. It may so happen that the values, party names, dates are fabricated and misrepresented in this project. DOE should terminate their contract for this project immediately. This is the only way out to protect the value of CDM process. If the PP is purchasing second hand or second quality equipment and inflating the purchase order values and invoices, this must be probed thoroughly and real values to taken for Additionality calculation. Then I'm sure the Additionality is not there at all in such a situation.</p>	<p><a href="#">52576BA000E2B4A</a></p>	
<p>Project owner should show some undertaking letter from bank manager to DoE stating that both DPR's are same. These kinds of letters should not be accepted and entertained by DoE at face value, but must be checked independently. While collecting the DPR/FR from banks and other agencies, all DPR/FR pages should be counter signed by Banks and other agencies so that the real DPR/FR given to other parties by the PP/Consultant is same as the one submitted to DOE.</p>	<p>Web links of the banks involved are provided below.</p> <p>But ESIA document in the following link shows the project details submitted to DOE are same as those submitted to banks.</p> <p><a href="http://www.ifc.org/ifcext/spiwebsite1.nsf/ProjectDisplay/ESRS26410">http://www.ifc.org/ifcext/spiwebsite1.nsf/ProjectDisplay/ESRS26410</a></p>	<p>DOE has validated all input values used in PDD through evidences listed in the report and confirm that they are consistent.</p>
<p>Has the PP considered the CDM revenues while envisaging the project? Without CDM the project was not viable, is it right? This project is having a debt component? Then how bankers or lenders gave the loan? Have the bankers or lenders considered the CDM revenues while agreeing to give loan to this project? If not this project should be rejected right away by DOE by terminating the contract forthwith. If yes, where is the proof? What is the date of the</p>	<p>CDM revenues were anticipated as stated on Chapter 6.2.1.1 of the EIA. There is no requirement in the CDM to demonstrate that the project is finically viable with CDM. Please refer EB 69 para 76.</p> <p>Prior consideration requirements were also fulfilled as per the relevant CDM guideline and evidences submitted to DOE.</p>	<p>DOE has validated the consideration of CDM in line with VVS 02.</p>

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evidence document from bank? Is this document printed now a day or earlier? DOE to independently check the same. If the document is available from Bank it must be checked from all angles so that it is genuine and not forged and date changed by putting back dated. This is normally done, DOE to be aware of this please. Please check the communication the PP had during that time with banks, emails and postal receipts and the weights and dates mentioned on the receipts. Do not believe in courier bills and receipts since these can be cooked up easily. Insist on government owned postal service receipts only. If the project is fully equity project then on what basis the PP has invested full equity in to the project while considering the CDM revenue? DOE to check the same in detail and bring out the facts. Is there any past record of this PP to invest or not to invest at returns what he is talking about in this project? Proper evidences must be reviewed and digged out by the DOE and take decision on the project based on established facts. Do not ask documents from PP, DOE to collect the same from different sources to do independent evaluation.		
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## APPENDIX A

### VALIDATION PROTOCOL



# VALIDATION REPORT

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## TABLE 1 MANDATORY REQUIREMENTS

Requirement	Reference	Conclusion
1. The project shall assist Parties included in Annex I in achieving compliance with part of their emission reductions commitment under Art. 3.	Kyoto Protocol Art.12.2	OK
2. The project shall assist non Annex I Parties contributing to the ultimate objective of the UNFCCC.	Kyoto Protocol Art.12.2	OK
3. The project shall have the written approval of voluntary participation from the designated national authority of each Party involved.	Kyoto Protocol Art.12.5a CDM Modalities and Procedures §40a	OK
4. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the Host Country thereof.	Kyoto Protocol Art.12.2 CDM Modalities and Procedures §40	OK
5. In case public funding from Parties included in Annex I is used for the project activity, these Parties shall provide an affirmation that such funding does not result in a diversion of official development assistance (ODA) and is separate from and is not counted towards the financial obligations of these Parties.	Decision 17/CP.7 CDM Modalities and Procedures Appendix B §2	OK
6. Parties participating in the CDM shall designate a national authority for the CDM.	CDM Modalities and Procedures §29	OK
7. The Host Party and the participating Annex I Party shall be a Party to the Kyoto Protocol.	CDM Modalities and Procedures §30/31a	OK
8. The participating Annex I Party's assigned amount shall have been calculated and recorded.	CDM Modalities and Procedures §31b	OK
9. The participating Annex I Party shall have in place a national system for estimating GHG emissions and a national registry in accordance with Kyoto Protocol Article 5 and 7.	CDM Modalities and Procedures §31b	OK
10. Reduction in GHG emissions shall be additional to any that would occur in the absence of the project activity, i.e. a CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity.	CDM Modalities and Procedures §43	OK
11. The emission reductions shall be real, measurable and give long-term benefits related to the mitigation of climate change.	Kyoto Protocol Art.12.5b	OK
12. Documentation on the analysis of the environmental impacts of the project activity, including Tran's boundary impacts, shall be submitted, and, if those impacts are considered significant by the project participant(s) or the Host Party, an environmental impact assessment in accordance with procedures as required by the Host Party shall	CDM Modalities and Procedures §37c	OK

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Requirement	Reference	Conclusion
be carried out.		
13. If required by the Host Country, an analysis of the environmental impacts of the project activity is carried out and documented.	CDM Modalities and Procedures §37c	OK
14. Comments by local stakeholders shall be invited, a summary of these provided and how due account was taken of any comments received.	CDM Modalities and Procedures §37b	OK
15. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for a minimum of 30/45 days, and the project design document and comments have been made publicly available.	CDM Modalities and Procedures §40	OK
16. Baseline and monitoring methodology shall be previously approved by the CDM Methodology Panel.	CDM Modalities and Procedures §37e	OK
17. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances.	CDM Modalities and Procedures §47	OK
18. Provisions for monitoring, verification and reporting shall be in accordance with the modalities described in the Marrakech Accords, and relevant decisions of the COP/MOP.	CDM Modalities and Procedures §37f	OK

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NOTE: - **PDD** WAS WEBHOSTED IN VVM TRACK AND APPLIED METH WAS ACM005 VERSION 06 WHICH HAD EXPIRED ON 01.03.2012. DURING SITE VISIT, PP EXPRESSED THAT WHILE UPDATING THE METHODOLOGY TO VERSION 07 THE PDD WILL BE ALSO REVISED IN VVS TRACK. HENCE CHECKLIST FOLLOWED WAS TO SUIT VVS REQUIREMENT.

## TABLE 2 REQUIREMENTS CHECKLIST

Checklist Question		Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
<b>A Description of Project Activity</b>						
<b>A.1 Title of the project activity</b>						
A.1.1.	Title of the project activity, revision number and date of PDD (section A.1). State the clearly identifiable title of the project activity, the version number and the date of the PDD.	/01,/B01/, /B03/	DR	"Clinker optimization in cement type production at Derba MIDROC cement Plant" is the clear identify title. The version no.02 dated 30/11/2011 is clearly identified.	OK	OK
A.1.2	Does the project comply with the applicable requirements for completing the PDDs?	/01,/B01/, /B03/	DR,I	Yes the project complies with the applicable requirements	OK	OK
<b>A.2 Description of the proposed project activity</b>						
A.2.1	Does the PDD contain an accurate description of the project activity and provide the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation? How was the design of the project assessed?	/01,/B01/, /31/	DR, I	The project is a large scale Greenfield project for proposed manufacturing of ordinary Portland cement and types of blended cement In manufacturing of blended cement The project shall use	CL-4	OK

<sup>6</sup> MoV: DR document review, I interview, CC cross checking

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Checklist Question	Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
			<p>additives as per the Ethiopian national standard on cement.</p> <p>it was expected to be completed by March 2012 but the project has not yet fully commissioned and currently undergoing trial runs and is expected to be fully commissioned before the end of this year.</p> <p>The project design was reviewed by interviewing the project Director, Plant Manager , review of TIFR and other supporting documentary evidences (by manufacturer &amp; supplier of plant and equipment ) and reviewing the design , feasibility study, national standards on Cement, and procurement plan for additives.</p> <p>As per TEFR study i the types of BC</p>		

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Checklist Question		Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
				Planned for production are CEM-I CEM II-BP CEM-IV. VVS59		
A.2.2	Does the project activity involve alteration of existing installations? If yes, have the differences between pre-project and post-project activity been clearly described in the PDD?	/01,/B01/, /B02/,/31/	DR, I	The project is a Greenfield project and does not involve alteration/modification of existing site. This was validated during the physical site visit to the project site., Independent Techno Economic Feasibility Report (TEFR )	OK	OK
A.2.3	Is the project location clearly defined?	/01,/B01/, /B02/, /31/		. In sec. A.2.4, location of the project activity is not in line with, Guidelines for project design document (CDM-PDD) and the proposed new baseline and monitoring methodologies (CDM-NM)" ver. 1.0. EB 66, Annex. 08. The PDD includes the map on page 4 shows the location of Choncho town in Oromiya regional; state.	<del>CAR-1</del>	OK
A.3 Technologies and /or measures						

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FM 4.9 PoA LS revised 29/11/2012

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Checklist Question	Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
A.4.3	Have the letters of approval have been issued?	/24/ ,/B01/	DR	There are two project participants .Host Country approval (LoA) for both e project participants have t been submitted. to DOE for Validation	CL-2 OK
A.4.4	Do the letters of approval meet the following requirements? (a) LOA confirms that the Party has ratified the Kyoto Protocol; (b) LOA confirms that participation is voluntary (c) The LoA confirms that the project contributes to the sustainable development of the Host Country? (d) The LoA refers to the precise project activity title in the PDD (e) The LoA was received directly by the DNA of the PP In case of doubt regarding the authenticity of the Loads, describe how it was verified that the letter of approval is authentic.	/24/ ,/B01/	DR	(a) LoA confirms that the Party has ratified the Kyoto Protocol; (b) LoA confirms that participation is voluntary (c) The LoA confirms that the project contributes to the sustainable development of the Host Country? (d) The LoA refers to the precise project activity title in the PDD An email was sent to official email ID 'esid@ethionet.et' and the confirmation of its issuance has been received from Ethiopian DNA.	OK OK
A.4.5	Have all private/public project participants been authorized by a Party to the Kyoto Protocol?	/24/ ,/B01/	DR	Ethan Bio-Fuels Pvt. Ltd. Co & Derba MIDROCK cement Pvt. Ltd. Co department have been authorised by DNA of Ethiopia	OK OK
<b>A.5 Public funding of project activity</b>					



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Checklist Question		Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
A.5.1	If public funding from Parties included in Annex I is used for the project activity, have these Parties provided an affirmation that such funding does not result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of these Parties?	/01./30/, /B01/	DR, I	The PP has affirmed in writing that no diversion of official development assistance has been used for this project.	OK	OK
<b>B.1 Application of selected approved baseline and monitoring methodology</b>						
B.1.1	Does the project activity apply an approved methodology and the correct version thereof?	/01./31/, /B01./B02 /	CC, DR, I	The project has applied “ Approve Consolidated Baseline and Monitoring methodology ACM0005I “Increasing the blend in Cement Production “version 06 in the PDD version 02 which was put for Global Stakeholders. The PDD has been subsequently revised to the methodology to most current version 07.01.0 dated 11 <sup>th</sup> May 2012.	OK	OK
<b>B.2 Applicability criteria of the methodology/tools</b>						
B.2.1	How was it validated that the project activity complies with the applicability criteria?	/01./03/, /04./13/, /18./19/, /26./31/, /B01./B02 /	CC, DR, I	This methodology is applicable to project activities that produce blended cement (BC) beyond current practices in the host country either in Greenfield cement plant-  This was validated by	OK	OK

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Checklist Question	Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
			<p>review of TIFR and current practices of Production Planning and during site visit</p> <p>There is no shortage of additives related to the lack of blending materials.- The Plant uses Lime stone and Pumice as additives-. The continuous availability and for both of them is validated through have long term mining rights for Pumice over 1.516 Sq KM in the OROMIA region of Ethiopia for 20 years up to 2029</p> <p>. Project participants should demonstrate that there is no alternative allocation or use for the additional amount of Additives used in the project activity.- This was validated by locations marked (8 nos.) in Alem Tena area which is exclusively allocated for use of the project</p>		

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Checklist Question	Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
			<p>plant.</p> <ul style="list-style-type: none"> <li>• This methodology is applicable to domestically sold output of the project activity plant and excludes export of blended cement;- Since Ethiopia is a cement deficient country and relies on significant imports , the export component is non-existing. This was validated through <a href="http://essays24.com/pri-nt/Introduction-Ethiopian-Cement-Market/30724.html">http://essays24.com/pri-nt/Introduction-Ethiopian-Cement-Market/30724.html</a></li> <li>• The methodology is not applicable if blending of cement outside the cement production plants is a common practice in the host country. – This was validated by reviewing the production data for the cement plants in private sector. Out of the four plants in private sector only one</li> </ul>		

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Checklist Question	Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
			<p>plant manufactures BC. The cement blending is not a common practice in the private cement plants in Ethiopia. There are Three cement plants in private sector which were commissioned during 2007-2008 and of these only one (National Cement) produced a blended cement with over 80.3 ~74% clinker contents during 2007-2009. The government plants have been excluded from this comparison.</p> <ul style="list-style-type: none"> <li>• Adequate data are available on cement types in the market. This was validated through news clipping and the contents available on internet e.g.</li> </ul> <p><a href="http://www.businessweek.com/news/2011-12-06/ethiopian-billionaire-s-cement-plant-to-start-output-this-month.html">http://www.businessweek.com/news/2011-12-06/ethiopian-billionaire-s-cement-plant-to-start-output-this-month.html</a></p> <p><a href="http://www.2merkato.co">http://www.2merkato.co</a></p>		

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Checklist Question		Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
				<a href="http://m/201204231143/ethiopias-plan-to-boost-cement-production-successful">m/201204231143/ethiopias-plan-to-boost-cement-production-successful</a>		
B.3 Project boundary						
B.3.1	Is the project boundary area clearly defined and in accordance with the applied methodology?	/01/,/31/,/B01/,/B02/	DR, I	In sec. B.3 of the PDD, flow diagram of the project boundary physically delineating the project activity indicates all the components of the systems and it's components required for the production of the type of blended cements	OK	OK
B.3.2	What are the project's system boundaries (components and facilities used to mitigate GHGs)?	/01/,/31/,/B01/,/B02/	DR, I	As per methodology ACM00005 version 16 the project boundary encompasses the site of the project facility, viz. Kiln, additives storages, and Cement mills.	OK	OK
B.3.3	Which sources are identified for the project? Does the identified project boundary cover all possible sources linked to the project activity?	/01/,/31/,/B01/,/B02/	DR, I	Project Emission are associated with the project activity As of now there is no onsite power generation facility but the same has been identified and included.( if installed in	OK	OK

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Checklist Question	Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
			<p>future</p> <p>All transport emissions for the delivery of additional additives have been included as a leakage.</p> <p>Project emissions on account of calcinations of raw material in kilns, fossil fuel consumption in kiln burners, driers is included.</p> <p>Project emissions through Electricity generation (in future) or import from grid for kiln operations and usage of electrify for additive preparation and grinding have been also identified and included.</p>		
B.3.4	Does the project involve other emissions sources not foreseen by the methodologies that may question the applicability of the methodology? Do these sources contribute by more than 1% to the estimated emission reductions of the project?	//01/,/31/, /B01/, /B02/	DR, I	The project involves all emissions sources as indicated/ foreseen by the methodologies that may question the applicability of the methodology. The project emission also associated with the	OK OK

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Checklist Question		Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
				project activity due to auxiliary electricity consumption. As project emission sources contribute by more than 1% of the total estimated emissions, these sources included in the project boundary.		
B.4 Baseline scenario identification						
B.4.1	Which baseline scenarios have been identified? Is the list of the baseline scenarios complete?	/01,/03/, /18/,/19/, /22/,/31/, /34//B02/, /B03/,/B08 /	DR, I	<p>The project is a large scale Greenfield project in private cement manufacturing space. Government owned plants which were commissioned before the year 2000 have been excluded.</p> <p>The purpose of the proposed project activity is to manufacture ordinary port land cement (OPC) Cements of type CEM-I having clinker %&gt;95% which is commonly produced , and blended cements (BC) of types CEMII/B-P, CEMII/B-L and CEM</p>	CL-3	OK



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Checklist Question	Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
			<p>IV/B</p> <p>As per applied methodology ACM0005, applicable to BC. The alternate scenarios for each type of BC-CEMII/B-P, CEMII/B-L and CEM IV/B were discussed separately.</p> <p>Following three alternative baseline scenarios has been considered for each type of BC: These alternatives are consistent with all applicable mandatory laws and regulations. The alternatives are :-</p> <p>The project activity undertaken without being a registered a CDM activity</p> <p>The cement requirement is met through existing manufacturing or import of cement he project activity.</p> <p>Continuation of current production practices of types of cements produced in the country.</p> <p>The above scenarios were validated through the cements output reports of all Four manufacturers i.e. Dejan, Abyssenia, Jema and</p>		

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Checklist Question	Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
			<p>National for the periods 2007-08-09</p> <p>From the review of data it was clear Cement types CEMII/B-L and CEM IV /B are going to be produced first time in the country and also have never been imported in the country.</p> <p>The Cement type CEM II B-P is produced in the private as well as government plants but the clinker content aimed in the project plant is 65% while the lower than Lowest % clinker share of available cement in Ethiopian Cement Market which currently stands at 71.28%</p>		
B.4.2	How have the other baseline scenarios been eliminated in order to determine the baseline?	/01,/03/, /18/,/19/, /22/,/31/, /34/,/B02/, /B03/,/B08 /	DR,I  “ Tool for demonstration and assessment of additionality” ver. 6.0 has been used to identify the baseline scenario	OK	OK
B.4.3	What is the baseline scenario? Is the determination of the baseline scenario in accordance with the guidance in the methodology?	/01,/03/, /18/,/19/, /22/,/31/, /34/,/B02/, /B03/,/B08 /	DR,I  4.1.1 PP applied “Combined Tool to identify the baseline and demonstrate additionality version 6.0 ” for identification of most	OK	OK

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Checklist Question		Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
				<p>plausible baseline scenario which is in accordance with applied methodology ACM0005</p> <p>4.1.2 For cement type CEM/II/B-P the continuation of the current blending trend in private cement industry is the baseline scenario for this type of cement. The most conservative value of 71.28% of clinker % has been chosen. Though the project is in private sector. But the value of 71.28% is the most conservative value including government plants.</p> <p>4.1.3 For Cement type CEMII/ B-L &amp; CEM IV/B the only credible scenario is to manufacture or import the comparable quality of cement</p>		
B.4.4	Has the baseline scenario been determined using conservative assumptions? Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	/01,/03/, /18/,/19/, /22/,/31/, /34/, /B02/,/B03 /,/B08/	DR, I	PP has used conservative assumptions while determining the baseline. The scenario used the most conservative value of 71.28% of clinker contents currently used by all cement	OK	OK

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Checklist Question		Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
				<p>manufacturers at the time of decision making. Baseline scenario chosen are consistent with applicable mandatory laws and regulations and comply to complies with the Ethiopian Cement standard ES 1177.1.2005 DOE has validated the current situation of baseline and confirm :-</p> <p>The trend of current cement situation (as on 18<sup>th</sup> September 2011 has been provided. The information provided is dated September 2011 refers to following information</p> <p>There is a shortfall of 7.8 Million T of over the generation capacity of 2.3 Million Tons.</p> <p>The Government is importing only OPC in to the country and no Blended cement</p> <p>The information was sourced through <a href="http://addisfortune.com/Vol_12_No_594_Archive">http://addisfortune.com/Vol_12_No_594_Archive</a></p>		
B.5 Additionality determination						
B.5.1	What tool does the project use to assess additionality? Is this in line with the methodology?	/01,/03/, /18/,/19/, /22/,/31/, /34/,/B02/,	DR, I	"Combined tool to identify the baseline scenario and demonstrate	OK	OK

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Checklist Question	Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
	/B03/,/B08/ /		additionality” ver. 6.0 has been used to assess additionality which is in line with applied methodology ACM0005 version 06		
B.5.2	What is the project additionality mainly based on?	/01,/03/, /18/,/19/, /22/,/31/, /34/,/B02/, /B03/,/B08/ /	DR, I PP has carried out Investment analysis and has also discussed investment barrier and common practice analysis in accordance with above tool.	OK	OK
B.5.3	Prior consideration of CDM				
B.5.3.1	What is the starting date of the proposed project activity?	/01,/02/,/08/,/B01/,/B10/, /10//31/	Starting date of project activity is 14/08/2009 which is the date of first major payment toward purchase of equipment for the project facility which is in line with CDM Glossary of terms; version 6.	OK	OK
B.5.3.2	What is the evidence for serious consideration of CDM prior to the time of decision to proceed with the project activity?	/01,/02/, /16/,/28/, /31/,/35/	DR, I Validation of serious consideration of CDM was carried out through following evidences The report on “Environment and social Impact assessment “ dated December 2007 by Holtec Consulting Pvt. Ltd. clearly states the consideration of carbon financing and CDM .In	4.1.4 <del>GL4</del>	OK

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Checklist Question		Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
				addition it also includes measures of production of blended cement to be taken for control and selection of pre-heaters to control and prevent and prevention of CO2 emissions . Proposal of Ethan Bio-Fuels dated 27/01, /03/2008 offering their Carbon services. “CDM Technical Implementation and Financial Feasibility document from Ethan Bio-Fuels Limited dated 28 <sup>th</sup> February 2008 and subsequent agreement between the parties dated 30 <sup>th</sup> June 2008. No Objection Letter dated 12/11/2008 issued by EPF-FDRE to Ethan Bio-Fuels for implementation of this blended cement project under CDM F-CDM –Prior Consideration despatched on 09/11/2009		
B.5.3.3	What initiatives were taken by the project participants from the starting date of the project activity to the start of validation in parallel with the physical implementation of the project activity?	/01,/02/, /16/,/23/, /24/,31/	DR, I	Beginning 14 <sup>th</sup> August 2009 following actions were initiated in parallel to physical implementation of the project	GL-4	OK

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Checklist Question	Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
			<p>I. Pumice extraction agreement was signed (29/09/2009)</p> <p>II. LOA requested 12/10/2009 and obtained.(26/11/2009)</p> <p>III. Signing of DOE Contract for Validation 30<sup>th</sup> November 2011</p> <p>There was a delay observed in the starting of validation. The delay was caused due to unsuccessful attempt in locating a buyer who can bear the CDM costs and also due unavailability of DOE to commence validation process.</p>		
B.5.3.4	Does the timeline of the project confirm that continuous actions in parallel with the implementation were taken to secure CDM status?	/01/,/02/,/16/,/23/,/24/,/31/,/35/	DR, I	Refer B.5.3.3 above	OK
B.5.4	Investment analysis				
B.5.4.1	What is the analysis method used to determine whether the proposed project activity is not (a) the most economically or financially attractive; or (b) economically or financially feasible, without the revenue from the sale of certified emission reductions?	/1/,/05/,/06/,/11/,/12/,/13/,/14/,/15/,/17/,/19/,/22/,	DR, I	PP has used Investment analysis to supplement the barrier analysis and have used "Guidance on the assessment of	OK



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Checklist Question		Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
		/23/,/27/, /31/, /B01/,/B03 /,/B06/		investment analysis”, ver. 5.0 to determine most economically attractive scenario.		
B.5.4.2	What financial indicator is used?	/1/ /,05/,/06/, /11/,/12/, /13/,/14/, /15/,/17/, /19/,/22/, /23/,/27/, /31/, /B01/,/B03 /,/B06/ /	DR, I	Equity IRR has been chosen as financial indicator.	OK	OK
B.5.4.3	Cross-check of main parameters used in the financial analysis: Raw material costs Incremental costs for plant and Machinery Cost of Electricity and Fuel used O & M costs Inflation trends in Ethiopia Lending rates by banks Debt Equity ratio	/1/ /,05/,/06/, /11/,/12/, /13/,/14/, /15/,/17/, /19/,/22/, /23/,/27/, /31/, /B01/,/B03 /,/B06/	DR	.Excel spread sheet “Plant, equipment and associated capital investment “& “Financial Analysis 301111” has been submitted and reviewed. Source of values used in the spreadsheet for each reference value have been verified. The spreadsheet has been corrected see CAR-3, CL-6 & CL-7	<del>CAR-3</del>  <del>CL-5</del>   CL-6	OK
B.5.4.4	Sensitivity analysis: have the key parameters contributing to more than 20% of the revenue/costs during operating or implementation been identified?	/1/ /,05/,/06/, /11/,/12/, /13/,/14/,	DR	4.1.5 The key parameters, inflation, increase of Sales price of Cement. Increase in	OK	OK

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Checklist Question		Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
		/15/,/17/, /19/,/22/, /23/,/27/, /31/, /B01/,/B03 /,/B06/		purchase price of kiln fuel and O & M costs which can contribute up to 20% of the revenue/costs has been identified for sensitivity analysis		
B.5.4.5	Sensitivity analysis: is the range of variations is reasonable in the project activity?	/1/ /,05/,/06/, /11/,/12/, /13/,/14/, /15/,/17/, /19/,/22/, /23/,/27/, /31/, /B01/,/B03 /,/B06/	DR	Yes, the range of variation +10 to -10% used is reasonable for the project activity.	OK	OK
B.5.4.6	Have the key parameters been varied to reach the benchmark and the likelihood of this happening been justified to be small?	/1/ /,05/,/06/, /11/,/12/, /13/,/14/, /15/,/17/, /19/,/22/, /23/,/27/, /31/, /B01/,/B03 /,/B06/		See above in B.4.5.6	OK	OK
B.5.5 Barrier analysis						
B.5.5.1	Are the barriers identified complimentary to a potential investment analysis?	/1/ /,12/,/13/, /14/,/15/, /19/,/31/, /34/,/B01/,	DR,I	Identification of barriers in the PDD has been addressed adequately. The Project has now identified the following	CAR4	OK

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Checklist Question		Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
		/B03/,/B07 //B08/		barriers under the two headings  Investment barrier LDC Barrier- Access to capital Technology Barrier Skilled manpower barrier Scale		
B.5.5.2	How were the investment barriers assessed to be real? How does CDM alleviate the investment barriers?	/1/ ,/12/,/13/, /14/,/15/, /19/,/31/, /34/,/B01/, /B03/,/B07 //B08/	DR, I	There is no private domestic capital market. Accessing finance from International Market is also sensitive to rating of a host country. i.e there has never been Moody's, S&P or Fitch rating for the host country. There is an ongoing liquidity crunch and flow of capital in the country is insignificant. These were further validated through information in public domain.  <a href="http://www.agco.com/documents/doc-53.pdf">http://www.agco.com/documents/doc-53.pdf</a>  <a href="http://addischamber.co">http://addischamber.co</a>	<del>CAR 4</del>	OK

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Checklist Question	Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
			<a href="m/aaccsa/userfiles/2011-09-29_PSDBooks/MarketPotentialAssessment.pdf">m/aaccsa/userfiles/2011-09-29_PSDBooks/MarketPotentialAssessment.pdf</a>		
B.5.5.3	Is the project activity prevented by the investment barriers and at least one of the possible alternatives to the project activity is feasible under the same circumstances?	/1/,/12/,/13/,/14/,/15/,/19/,/31/,/34/,/B01/,/B03/,/B07//B08/	DR, I	See above in 5.5.2	<del>CAR 4</del> OK
B.5.5.4	How were the technological barriers assessed to be real? How does CDM alleviate the technological barriers?	/1/,/12/,/13/,/14/,/15/,/19/,/31/,/34/,/B01/,/B03/,/B07//B08/	DR, I	The plant feasibility as well as implementation supervision was performed by a foreign entity. The plant design, manufacturing as well as erection were made by foreign entities including for maintenance & operation of the plant for further duration. This implies that the technology is new to the plant owner exposing him to significant technology risk. This was validated through <a href="http://www.londonmet.a">http://www.londonmet.a</a>	<del>CAR4</del> OK

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Checklist Question	Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
			<a href="http://c.uk/fms/MRSite/acad/dass/ISJ%20Journal/V3N1/03_Barriers%20to%20E-commerce%20in%20developing%20countries_Lawrence&amp;Tar.pdf">c.uk/fms/MRSite/acad/dass/ISJ%20Journal/V3N1/03_Barriers%20to%20E-commerce%20in%20developing%20countries_Lawrence&amp;Tar.pdf</a>		
B.5.5.5	Is the project activity prevented by the technological barriers and is at least one of the possible alternatives to the project activity is feasible under the same circumstances?	/1/ /12/,/13/, /14/,/15/,/1 9/,/31/,/34/ /B01/,/B0 3/,/B07/B0 8/	DR, I	See above in 5.5.4	OK
B.5.5.6	How were the barriers due to prevailing practise assessed to be real? How does CDM alleviate the barriers due to prevailing practice?	/1/ /12/,/13/, /14/,/15/, /19/,/31/, /34/,/B01/ /B03/, /B07/,/B08 /	CC, DR, I	4.1.6 Since Ethiopia is a cement deficient state. The prevailing practice on relaying on imported cement of clinker content 95% is quite high. The current capital market scenario in Ethiopia continues to be unattractive for investors.	<del>CAR-4</del> OK
B.5.5.7	Is the project activity prevented by the barriers due to prevailing practice and is at least one of the possible alternatives to the project activity is feasible under the same circumstances?	/1/ /12/,/13/, /14/,/15/,/1 9/,/31/,/34/ /B01/,/B0 3/,/B07/,/B 08/	CC, DR,	See above in 5.5.6	<del>CAR-4</del> OK
B.5.5.8	How were the other barriers assessed to be real? How does CDM alleviate the other barriers?	/1/ /12/,/13/,/	CC, DR,	The other barriers identified are	<del>CAR-4</del> OK

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Checklist Question		Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
		14/,/15/,/19/,/31/,/34/,/B01/,/B03/,/B07/,/B08/		<p>Scale of the project. :- Debra project is the largest cement producing plant in the Ethiopia with about 7500 T/Day of cement generation capacity. This capacity is almost twice the existing capacity of the project in private sector. Inexperience in O &amp; M of such large project is a barrier that will be overcome by CDM revenue.</p> <p>Availability of skilled manpower- Since the Ethiopia is a LDC and there are not many industrialists in the country, getting skilled industrial workers are a barrier. The Project has signed a O &amp;M contract with the CNBN International Engineering Company China .This was validated through review of contract and interactions with O &amp; M staff</p>		
B.5.5.9	Is the project activity prevented by the other barriers and is at least one of the possible alternatives to the project activity is feasible under the same circumstances?	/1/,/12/,/13/,/14/,/15/,/19/,/31/,/33/,/34/,/B01/	CC, DR,	See above in 5.5.8	<del>CAR 4</del>	OK

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Checklist Question		Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
		,/B03/,/B07/,/B08/				
B.5.6 Common practice analysis						
B.5.6.1	What are the geographical scopes and scope of technology of the common practice analysis?	/1/,/12/,/13/,/14/,/15/,/19/,/31/,/33/,/34/,/B01/,/B03/,/B07/,/B08/	DR	<p>Common practice analysis is discussed in sec. B.5 of the PDD in line with “combined tool to identify the baseline scenario and</p> <p>The project has demonstrated the following with first of its kind (FOIK). This was validated in the following manner. in the following manner:-</p> <p>a) The cement types CEM II/B-L and CEM IV/B have never been manufactured in the country and the same was found to be correct from the production data for all public and privately owned plants.</p> <p>b) Diffusion of Technology:-Total volume of the BC type CEMII/B-P produced in the host country by private cement producer in the year2007 is 0.1% &amp; in 2008 is 1.8% which is less than 5% of the total blended cement produced.</p> <p>c</p>	<del>CAR-5</del>	OK



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Checklist Question	Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
B.5.6.2	How many similar non-CDM-projects exist in the region within the scope?	/1/ /12/,/13/,/14/,/15/,/19/,/31/,/33/,/34/,/B01/,/B03/,/B07/,/B08/	DR  There are total six nos. of cement plants in the country. Two are government owned and (Mugher and Mosbo established in the years 1984 & 2000) produce 650, 000T and 600,000T of cement annually. There are four other plants in private sector and Put together produce 390,000 T annually.  As per TEFR the project plant has a capacity to reach up to minimum of 1.41 Million Tons/annum which is almost twice the size of any cement plant in the country.	CL7	OK
B.5.6.3	What is the data source(s) used for the common practice analysis?	/1/ /12/,/13/,/14/,/15/,/19/,/31/,/33/,/34/,/B01/,/B03/,/B07/,/B08/	CC, DR  Though the project fulfils the criteria of FOIK it has conducted a test of common practise as detailed in the “ Tools for demonstration and assessment of additionality .It was validated from the production data for the year 2008 and concluded that project activity is not a common practise.	OK	OK

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Checklist Question		Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
<b>B.5.7 Conclusion on the additionality assessment</b>						
B.5.7.1	What is the conclusion with regard to the additionality of the project activity?	/1/ /12/,/13/,/14/,/15/,/19/,/31/,/33/,/34/,/B01/,/B03/,/B07/,/B08/	DR	CC confirms that The Project is additional on account of following  It is in LDC IT is First of its kind in Ethiopia. It faces barriers Investment barrier LDC Barrier- Access to capital Technology Barrier Skilled manpower barrier Scale is twice the size of existing plants in private sector Confirmation through Invest analysis and common practise analysis demonstrate that the project is additional	OK	OK
<b>B.6 Calculation of GHG emission reductions</b>						
<b>B.6.1 Baseline emissions</b>						
B.6.1.1	Are the calculations documented according to the approved methodology and in a complete and transparent manner?	/01/,/21/22/,/31/,/B01/,/B02/,/B04/,/B05/,/B09/	DR	Baseline emission is calculated according to approved methodologies and tools.	OK	OK
B.6.1.2	Have conservative assumptions been used when calculating the baseline emissions and are the uncertainty estimates properly addressed?	/01/,/21/22/,/31/,/B01/,/B02/,/B04/,/B05/	DR	<b>4.1.7</b> Baseline emission is calculated through baseline clinker share which is set at	CL-8	OK

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Checklist Question		Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
		, /B09/		71.28% and is most conservative. For determination of Benchmark clinker share the complete cement market including that of government owned cement plants and imported quantities have been considered. For CEMII/B-L and CEM IV-B Benchmark clinker share has been determined as 95% .since this type of cement is not produced in the country and baseline has been determined a OPC i.e cement with clinker% 95%		OK
B.6.2 Project emissions						
B.6.2.1	Are the calculations documented according to the approved methodology and in a complete and transparent manner?	/01,/21/ 22/,/31/,/B 01/,/B02/, B04/,/B05/ ,/B09/	DR	Project emission has been calculated based on latest applied methodology and applicable tools	OK	OK
B.6.2.2	Have conservative assumptions been used when calculating the project emissions and are the uncertainty estimates properly addressed?	/01,/21/ 22/,/31/,/B 01/,/B02/, B04/,/B05/ ,/B09/		Detailed baseline emission excel sheet has been provided for validation to check the assumptions used and their conservativeness.	OK	OK
B.6.3 Leakage						
B.6.3.1	Are the calculations documented according to the	/01,/21/	DR	As per the applied	CL-09	OK

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	approved methodology and in a complete and transparent manner?	22/,/31/,/B01/,/B02/,/B04/,/B05/,/B09/		methodology the emissions due to transportation of additive has been considered as leakages. There are two additives identified 1) Limestone- Since this is going to be transported through belt conveying system the leakage is not accounted for .Only in the cases of emergency this will be transported over the distance of 15KM and accounted for. 2)Pumice is to travel over 115Km distance hence the leakages due to its transportation is accounted for, however a clarification is required for the leakages volumes for 2015-18		OK
B.6.3.2	Have conservative assumptions been used when calculating the leakage and are the uncertainty estimates properly addressed?	/01/,/21/22/,/31/,/B01/,/B02/,/B04/,/B05/,/B09/	DR	Yes the conservative assumptions has been made in calculating leakages	OK	OK
B.6.4 Emission reductions						

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Checklist Question	Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
B.6.4.1	Has the methodology been correctly applied to calculate the emission reductions and can this be replicated by the data provided in the PDD and supporting files to be submitted for registration?	/01,/21/ 22,/31/,/B 01/,/B02/ B04/,/B05/ ,/B09/	DR	The methodology and tools has been correctly applied to calculate the emission reductions. but PP has included the references/ web links in the CER calculation & spread sheet.	<del>CAR-6</del>  OK
B.6.5 Data and parameters that are available at validation and that are not monitored					
B.6.5.1	How were the parameters available at validation verified?	/01,/21/ 22,/31/,/B 01/,/B02/ B04/,/B05/ ,/B09/	DR, I	Parameters available at the time of validation through their respective sources such as TEFR and IPCC default	<del>CAR-6</del>  OK
B.7 Monitoring plan					
B.7.1 Data and parameters monitored					
B.7.1.1	Does the monitoring plan described in the PDD comply with the requirements of the methodology?	/01,/21/ 22,/31/,/B 01/,/B02/ B04/,/B05/ ,/B09/	DR, CC	Yes, the monitoring plan described in the PDD complies with the requirements of the methodologies AM 0102	OK  OK
B.7.1.2	Does the monitoring plan contain all necessary parameters and are they clearly described?	/01,/21/ 22,/31/,/B 01/,/B02/ B04/,/B05/ ,/B09/,B10	DR	The section B.7.1 of the PDD is complying with the means of measuring” PDD includes include details of monitoring /recording frequency, calibration frequency of measuring instruments,	<del>CAR-7</del>  OK

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			and accuracy class for all the parameters. In addition it also includes how the data is stored, crosschecked and the emergency preparedness measures available		
B.7.1.3	Is the monitoring frequency adequate for all monitoring parameters? Is it in line with the monitoring methodology?	/01/,/21/22/,/31/,/B01/,/B02/,/B04/,/B05/,/B09/,/B10/	DR,I	Yes the monitoring frequencies of parameters have been defined, and the same are in line with the methodology	<del>CAR-7</del> OK
B.7.1.4	Is the recording frequency adequate for all monitoring parameters? Is it in line with the monitoring methodology?	/01/,/21/22/,/31/,/B01/,/B02/,/B04/,/B05/,/B09/	DR	See above B.7.1.3	<del>CAR-7</del> OK
<b>B.7.2 Monitoring of sustainable development indicators/environmental impacts</b>					
B.7.2.1	Is the monitoring of sustainable development indicators/ environmental impacts warranted by legislation in the host country?	/01/,/10/,/26/,/31/,/B01	DR,I	Yes, The impacts are identified as EPA Draft National Standard and the same are listed in the TEFR study. Being a cement plant the project has environmental management plans to monitor, record and mitigate the same.	<del>CL-10</del> OK
B.7.2.2	Does the monitoring plan provide for the collection and archiving of relevant data			See above in B.7.2.1	CL-10 OK

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Checklist Question		Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
	concerning environmental, social and economic impacts?					
B.7.2.3	Are the sustainable development indicators in line with stated national priorities in the host country?			See above in B.7.2.1	CL-10	OK
B.7.3 Management, quality assurance and quality control						
B.7.3.1	How has it been assessed that the monitoring arrangements described in the monitoring plan are feasible within the project design?	/01,/03/, /B02/	DR,I	Detailed Monitoring arrangements have been provided for each parameter in PDD	<del>CAR-7</del>	OK
B.7.3.2	Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)?	/01,/03/,	DR	Procedures have been identified for day to day recording of parameters in section B.7.3 of PDD	<del>CAR-7</del>	OK
B.7.3.3	Are the data management and quality assurance and quality control procedures sufficient to ensure that the emission reductions achieved by/resulting from the project can be reported ex post and verified?	/01,/03/, /B02/	DR, I	Yes the data management quality control & quality assurance procedures are sufficient to ensure that the emission reductions can be reported ex post and verified	<del>CAR-7</del>	OK
B.7.3.4	Will all monitored data required for verification and issuance be kept for two years after the end of the crediting period or the last issuance of CERs, for this project activity, whichever occurs later?	/01,/03/, /B02/	DR,I	Yes the monitored data and all records will be maintained for at least 2 years after the end of crediting period.	<del>CAR-7</del>	OK
C. Duration of the project activity and crediting period.						
C.1 Start date of project activity						
C.1.1	What is the expected starting date of the project activity and how has been determined? When was the first construction activity?	/01,/03/	DR,I	The project start date is 14/08/2009 i.e. the date of first critical	OK	OK

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Checklist Question		Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
				investment of €43.19M was effected through bank transfers to “China National Building Material “by virtue of Which is in line with CDM glossary of terms, ver. 6.0		
C.1.2	What is the expected operational lifetime of the project activity? Is it reasonable?	/01,/11/ /31/	DR,I	The expected lifetime indicated in PDD is 16 years. PP has provided the supporting evidence to substantiate operational life time of the project activity.	CL 11 PP requested to provide supporting evidence to substantiate operational life time of the project activity.	OK
C.2 Start date of crediting period						
C.2.1	What is the expected starting date of the proposed project activity? Does the crediting period start eight weeks after the request for registration?	/01,/02/ /03/	DR, I	The start date of project activity is 14/08/2009 and of the crediting period is 15/11/2012 or the date of registration whichever is later.	OK	OK
C.2.2	What is the length of the crediting period? Is it clearly defined and reasonable?	/01,/02/ /B01/	DR,I	Fixed crediting period of 10 years opted for the project.	OK	OK
D. Environmental Impact						
D.1.1	Has an analysis of the environment impacts of the project activity been undertaken? Is it clearly and sufficiently described in the PDD?	/01, /28/,/29, /31/,/B01/	DR	Analysis of Environmental Impact is presented in the PDD.	OK	OK



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Checklist Question		Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
D.1.2	Will the project create any adverse environmental effects? Are trans boundary environmental impacts considered in the analysis?	/01,/B01/, /28/,/29, /31/	DR, I	Analysis of Environmental Impact is presented in the PDD.	OK	OK
D.1.3	Is the analysis of the environmental impacts required by the legislation of the Host Country? If yes, has the EIA has been approved by local Government? Does the approval contain any conditions that need monitoring?	/01,/B01/, /28/,/29, /31/	DR,	Yes, the ESIA study is carried out as per local, national, international Environmental regulations.	OK	OK
D.1.4	Is the project in line with the current environmental legislation in the Host Country?	/01,/B01/, /28/,/29, /31/	DR,	Yes the project is in line with current environmental legislation	OK	OK
<b>E. Local stakeholder consultation</b>						
E.1.1	Were the local stakeholders invited by the PP prior to the publication of the PDD to the UNFCCC website?	/01,/B01/, /28/,/29, /31/	DR	Yes a comprehensive local stakeholders were invited in the year 2007, In addition separate consultation was held with Environmental Protection authority ,FDRE prior to the publication of PDD to UNFCCC	OK	OK
E.1.2	Were the local stakeholders invited to comment on the proposed project activity?	/01,/B01/, /28/,/29, /31/	DR, I	Local stakeholders were invited to discuss the project activity; communication was	CL-12	OK

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Checklist Question		Reference	MoV <sup>6</sup>	Comments	Draft Conclusion	Final Conclusion
				made to the stakeholder about the CDM aspects of the proposed project. The stake holder comments description in PDD does meet the requirements of Para 129 of the VVS.		
E.1.3	Is the summary of the comments received from the stakeholders, provided in the PDD complete?	/01,/B01/, /28/,/29, /31/	DR	Yes summary of comments received are provided in section E of the PDD.	OK	OK
E.1.4	Has due account been taken by the project participants of any stakeholder comments received?	/01,/B01/, /28/,/29, /31/	DR, I	The records of the stakeholder reveals that due account was taken on the comments received from stakeholders.	OK	OK
E.1.5	If a stakeholder consultation process is required by regulations/laws in the Host Country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	/01,/B01/, /28/,/29, /31/	DR, I	Yes the stake holder consultation was carried out as per article 92 chapter 10 of national policy.	OK	OK

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NOTE: - **PDD** WAS WEBHOSTED IN VVM TRACK AND APPLIED METH WAS ACM005 VERSION 06 WHICH HAD EXPIRED ON 01.03.2012. DURING SITE VISIT, PP EXPRESSED THAT WHILE UPDATING THE METHODOLOGY TO VERSION 07 THE PDD WILL BE ALSO REVISED IN VVS TRACK. HENCE CHECKLIST FOLLOWED WAS TO SUIT VVS REQUIREMENT

## TABLE 3 RESOLUTIONS OF CORRECTIVE ACTION REQUESTS AND CLARIFICATION REQUESTS

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
CAR 1 The PDD does not comply with “Guidelines for project design document (CDM-PDD) EB 66, Annex. 08	A.1.2	<u>First response</u>  At the time of validation, new Methodology version and new PDD format also emerged. The revised PDD Version 3 dated 23/08/12 adapting Approved Methodology ACM0005V07.1.0 and using the recently revised PDD form is submitted with this response.  The revision also adjusted with new diagram showing the location of Oromia Region in Ethiopia and the project activity location (Derba) in	DOE’s response PDD has been revised in version 3 of F-CDM_PDD and the most recent version of methodology ACM 0005 version 07, however following corrections are required to be done to make it fully compliant to EB 66 Annex 08  Section A1 does not provide clear description of  a) The scenario existing prior to the implementation of the project activity including, where applicable, the type of facility where the project activity will take

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Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		<p>Oromia region.</p> <p><u>Follow up response</u></p> <p>PDD has been revised</p>	<p>place or replace</p> <p>b) The baseline scenario, as identified in section B.4 below.</p> <p>c) If there is no party “B” identified in then please delete the row.</p> <p>Other sections of PDD also needs to be corrected for following:-</p> <p>d) The “Table nos.” are not referred correctly in the PDD Please correct</p> <p>DOE’s Further response</p> <p>The revised PDD now includes the above information hence CAR is closed. <input checked="" type="checkbox"/></p>
<p><u>CAR-2</u></p> <p>As per Para 64 -68 VVS 02.0the project description is incomplete with reference to the procurement and planning of additives used in the project activity</p>	A.3.1	<p>The revised PDD Version 3 is adjusted with new revised paragraphs to include the complete description of the procurement and planning of cement Additives.</p>	<p>DOE’s response</p> <p>The revised PDD version 02 includes this information hence CAR is closed. <input checked="" type="checkbox"/></p>
<p><u>CAR-3</u></p> <p>As per Para 118-120 of VVS Para 02.0on accuracy of financial calculations Please correct the following:-</p> <p>a) Please indicate the source of values used the spreadsheet for each reference value</p> <p>b) On the “Incremental Investment “tab of Financial Analysis sheet Please clarify with supporting evidences how “Estimated Incremental Capital Investment has been determined., substantiating the same with the supporting evidences.</p> <p>c)Additionally link “Incremental investment in</p>	B.5.4.3	<p>In the revised PDD Source of each and all values is indicated in the table</p> <p>Supporting evidence of estimation of “incremental capital investment” has been provided</p> <p>In the Financial Analysis spreadsheet “Incremental investment” sheet has been linked to IRR spreadsheet. “plant equipment and capital assessment” sheets is included in “incremental investment” sheet</p> <p>Follow up Response</p>	<p>DOE’s response</p> <p>Validation of Financial investment sheet dated 22.08.2012 could not be done due to following reasons</p> <p>The sheet is not fully linked and in many cells, arbitrary values are used without any linkage or reference source e.g. In the worksheet IRR on Equity CEMII-BP. Row 30 has a multiplication factor of 0.5 Row 32 has a multiplication factor of 0.24 The above are only illustrations. Please ensure that the complete workbook is reviewed so that it is clear, transparent</p>

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Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
USD" in the excel sheet "Plant equipment and capital assessment .xls		Since the project is demonstrating the additionality through Barrier route the response is not required.	and easily understood. The same will be required to be submitted to EB at the time of registration  Neither the PDD nor the workbook has clear explanation on how the equity bench mark has been calculated and justification for its most appropriate and conservativeness  <u>DOE's Further response</u> The CAR-3 is closed as it is no more relevant.☑
CAR-4 1) Identification of barriers is not carried out adequately as listed in this section as per 124-126 of VVS version 02.0 PP to provide the complete list of barriers existing at the time of decision making along with their supporting evidences  2) PP also has to establish how these barriers will be overcome. By the Project activity	B.5.5.1	In the revised PDD Version 3, new and revised paragraphs to include the complete list of barriers existing at time of investment decision in accordance with B.5 of the "Guidelines for project design document (CDM-PDD) EB 66, Annex. 08 and the "Tool for the demonstration of Additionality" version 06.0. The evidences have also been provided thereby. <u>Follow-up response</u>  Links of information are provided in revised PDD keeping in mind the provisions of "GUIDELINES FOR OBJECTIVE DEMONSTRATION AND ASSESSMENT OF BARRIERS" (Version 01) "Guideline 7.	DOE's response The Project has now identified the following barriers under the two headings  Investment barrier LDC Barrier- Access to capital Technology Barrier Skilled manpower barrier Scale  Please add hyperlinks of information available in public domain to substantiate these barriers. DOE's Further response  Barrier due to prevailing practise- The Project has demonstrated that it is FOIK project. Based on the proposed volumes & types of Cements it plan to produce

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Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		<u>Follow-up response</u>  PDD has been revised to include the same.	Please provide the data in the PDD to substantiate above information DOE's Further response The sources for information pertaining to demonstration of barriers have been provided in the Revised PDD. <input checked="" type="checkbox"/>
<b>CAR-5</b> In table 008 of PDD "% Share of each type of privately produced blended cement in national market has not been calculated correctly.	B.5.6.1	The respective spreadsheet has been adjusted accordingly and the correct value inserted in table 006 of the revised PDD Version 3	DOE's response  The value is now corrected. CAR is closed <input checked="" type="checkbox"/>
<b>CAR-6</b> PP requested to provide supporting documents /references/ web links for all the parameters which was available at the time of validation and included in B.6.2 of the PDD	B.6.4.1	All supporting documents for parameters available and fixed ex-ante under B.6.2 are obtained either from the TEFR, GEF calculation and have been provided to DOE.	DOE's response The supporting documents were provided & verified. CAR is closed <input checked="" type="checkbox"/>
<b>CAR-7</b> The section B.7.1 of the PDD is not complying with the requirement Paragraph 132 of VVS 2.0  PP requested to include details of monitoring recording frequency, calibration frequency of measuring instruments, and accuracy class for all the parameters. In addition it should also include how the data is stored, crosschecked and the emergency preparedness measures available	B.7.1.2	The revised PDD Version 3 is adjusted with new revised paragraphs under B.7.1 to cover all aspects (calibration, accuracy, frequency etc.) of monitoring for each and every parameter to be monitored.	DOE's response The PDD is revised to include details of monitoring recording frequency, calibration frequency of measuring instruments, and accuracy class for all the parameters. In addition it now also include how the data is stored, crosschecked and the emergency preparedness measures available The information is available in section 7.3 of the PDD. CAR is closed <input checked="" type="checkbox"/>
<b>CL-1</b> The TEFR study indicates type of BC Produced CEM-I and CEM II while PDD and the production plans state that that CEM IV type cements is also	A.2.1	For the sake of the TEFR, a single production grid similar to the matrix we have provided for the first crediting year with types CEM-I and CEM II/B-P was	DOE's response The response is accepted, CL closed <input checked="" type="checkbox"/>

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Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
being planned to be produced. . Para 64 -68 VVS 02		analysed based on the trend of the existing market practice. However project further considered the enhanced production grid with other cement types on March 20, 2008 in agreement with CDM feasibility study concluded on February 28, 2008. Further design and manufacturing of the cement plant under the turnkey contract took consideration of all production possibilities Ex: conveyor belts taking limestone as additive to cement mill, mill capacity safety factors, capacity increase advantage in case of switch from grinding hard material (Clinker) to softer material (pumice) and number of cement mills.	
CL- 2 Host Country approval (LoA) in favour of one of the PP has not been provided to DOE for Validation.	A.4.3	During DOE visit the LOA for one of the PP's was not available. In accordance with DOE instruction, PPs have now obtained from DNA and hence in addition to the previously submitted LOA for one of the PP's, Host Country approval (LOA) in favour of the other PP has also been provided.	DOE's response Host country approval for Debra Cement Limited dated 065/08/2012 has been submitted to DOE and the same was found to be in order. CL closed <input checked="" type="checkbox"/>
CL 3 The TEFR study recommends minimum % clinker as 67% while the PDD has assumed the minimum % of clinker as 65%. Please clarify. VVM para 59	B.4.1	The TEFR put a preliminary assumption of clinker share. The Ethiopian cement standard (which is similar to the British standard) allows lower (65%) clinker share for type CEMII/B-P than 67% assumed arbitrarily in the TEFR. The CDM project production plan agreed further by PP's, proposes to produce low carbon cement that will meet the minimum allowable clinker share limit in each type in the Ethiopian standard.	DOE's response  The response is accepted, CL closed <input checked="" type="checkbox"/>

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Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
<p>CL-4 Please submit the copy of the F-CDM-Prior along with the confirmation of its receipt by UNFCCC.</p> <p>Please clarify the reasons for delay of over 24M in starting validation of the project</p>	B.5.3.2	<p>A copy of the F-CDM-Prior along with the confirmation of its receipt by UNFCCC has been emailed to DOE.</p> <p>Further Response of PP PP's have notified prior CDM consideration to UNFCCC and DNA on November 9, 2009 and acknowledged by UNFCCC on November 17, 2009. Moreover, in complying with para 5 of annex 13 of EB 62, PPs have informed the UNFCCC secretariat on November 16, 2011 (within two years of the initial notification) regarding its progress. A copy of email communication have been submitted in this regards</p> <p>The 24M period between the date of LOA to EBF (November 2009) and the date of signing with DOE for validation (November 2011), this was caused by time taken to market and identify a buyer who cover's cost of validation. Example of such unsuccessful solicitation emails with potential buyer dated 20/05/2010 is forwarded with this response.</p> <p>Further to this the attempt to find a DOE even with our own coverage also took several months due to DOE availability.</p> <p>Examples of unsuccessful DOE search</p>	<p>DOE's response F-CDM-Prior dated 09/11/2009 has been submitted to DOE. Review of this document has led to a further clarification. Since the application was submitted on 09/01/2009 it is not clear if a Notification of extension of Prior Consideration notice was sent with the period of two years as stated in Paragraph 5 of EB 62 Annex 13 Annex 13.</p> <p>Further Response by DOE</p> <p>The Email communication and confirmation evidence/<sup>35/</sup> demonstrate that request for extension of notification was submitted &amp; confirmed by UNFCCC secretariat on 17/11/2011. The same was validated through UNFCC website/<sup>22/</sup> This complies with Paragraph 5 of EB 62 Annex 13. <input checked="" type="checkbox"/></p> <p>The reasons for delay in Validation of the project have been accepted. The response is accepted, CL closed <input checked="" type="checkbox"/></p>



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Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		<p>emails with potential DOE dated 23/11/2011 is forwarded with this response.</p> <p>Moreover start of import of project plant equipment itself started in this period and hence the construction lead time justifies less consideration to validation urgency.</p> <p>.</p>	
<p>CL-5</p> <p>a) On the "Clinker raw material tab" It is not clear How the traditional and other raw mix possibilities have been determined? Substantiate it with evidence</p> <p>b) Why clinker quantities are increasing for 2008-10?</p>	B.5.4.3	<p>The description in this "Clinker raw material tab" spreadsheet talks only about clinker making section which remains constant for the baseline and project and is not related to the blending measure (project activity). It simply shows the share and unit cost of the raw mix composition in clinker making using the traditionally used raw mix materials (limestone and clay) and the other possibility (limestone, sand etc.). Since the TEFR assumes the later raw mix, the same has been considered in the financial analysis both in baseline and project. The actual will be monitored for the crediting year as well. We have therefore removed the redundant details from the spread sheet in the revised submission.</p> <p>While the clinker kiln is rated at 5600tpd, the PPs assumed it may only be practical to reach its full daily production capacity in three years starting from 80% in first year to 100% with 10% increment every year. The actual % utilized will be used for ex-post calculation of in the crediting year.</p>	<p>DOE's response</p> <p>Clarification accepted and closed. <input checked="" type="checkbox"/></p>

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Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
<p>CL-6</p> <p>On the “empty tab” Please clarify the following ,indicating source of the value used:-</p> <p>a) Why the inflation rates for 2007 &amp; 2008 are shown differently in cell I12,I14 and the value used in cells E119,E121</p> <p>b) In case the empty sheet is not to be used please delink this sheet with the other pages of workbook</p> <p>c) Why discount rate of 20% is chosen</p>	B.5.6.2	<p>The “empty tab” is removed since it was not correct and was redundant as well.</p> <p>The appropriate inflation value available close to start date and supported by evidences has been used.</p> <p>Since IRR is chosen as indicator and hence no discount rate is required</p> <p>Further response By PP</p> <p>Since the project is demonstrating the additionality through Barrier route the response is not required.</p>	<p>DOE’s response</p> <p>On review of Financial spread sheet following clarifications are sought</p> <p>How the Fair value of the project has been determined as per para 4 of EB62 Annex 5</p> <p>The spreadsheet does not show any sensitivity demonstration. The PDD should show separately sensitivity analysis for both outputs of cement types</p> <p>DOE’s Further response</p> <p>CAR-3 is closed as it is no more relevant.☑</p>
<p>CL 7</p> <p>Please furnish the most recent trends of cement productions with their respective types in the Ethiopia indicating the manufacturing plant sources.</p>	B.5.6.2	<p>First response</p> <p>The source of information for the most recent statistics of import and production for year 2011 has been provided. The source has been included under Appendix 4.</p> <p><a href="http://addisfortune.com/Vol_12_No_594_Archive">http://addisfortune.com/Vol_12_No_594_Archive</a></p> <p>Follow-up response</p> <p>Demonstration and assessment of Additionality is required to be based on the information available to PP’s at the start of the project activity. Assessment of benchmark blending rate is also required to be based on data one year before the start date, as per the</p>	<p>DOE’s response</p> <p>The trend of current cement situation (as on 18<sup>th</sup> September 2011 has been provided. The information provided is dated September 2011 refers to following information</p> <p>There is a shortfall of 7.8 Million T of over the generation capacity of 2.3 Million Tons.</p> <p>The Government is importing only OPC in to the country and no Blended cement</p> <p>The above information does not provide the most recent trends of types of Cement produced in the country.</p>

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		<p>methodology under step 2.1. We have based our PDD based on data from plants for 2007 and/or 2008 vintage which are years before our start date.</p> <p>However as per DOE request we have tried our best for data for years after the start date and found the remaining information on types of production from a research institution; i.e Research by Mengistu Aregaw, "Investigation of Calcite and Volcanic Ash for Their Utilizations as Cement Filling and Additive Materials" Addis Ababa University Graduate studies, June 2010, Page 3, table 1.1: Cement productions in Ethiopia, submitted after this response.</p> <p>PDD has been revised to include the same.</p>	<p>DOE's Further response</p> <p>"The document "Investigation Of Calcite and Volcanic Ash for their Utilization as Cement Filling and Additive Materials dated June 2010" brings up the most recent trends of production of types of cement in the country. This documents further highlights "OPC cement is preferred by the local market .The demand for OPC is growing fast and is now taking a share of up to 25-30% of the total supply. Local contractors prefer to use OPC</p> <p>The CAR is closed <input checked="" type="checkbox"/></p>
<p>CL-8</p> <p>The benchmark clinker share is not chosen conservative as 71% for BC of types CEMII/B-L and CEM IV-B ,in table 011 of PDD, Please clarify</p>	B.6.1.2	<p>First response</p> <p>1) The benchmark has been set using the guidance under step 2 of the "Baseline Emissions" section (page 9/36) and for each type of cement including considering import as well as per the guidance in the last paragraph under "Emissions Reduction" section (page 20/36).</p> <p>2) A revised CERs spreadsheet with base year clinker benchmark calculated taking</p>	<p>DOE's response</p> <p>a) In the "blending benchmark sheet.xls" dated 24.09.2012.xls. Following needs to be clarified / corrected.</p> <p>The values used in columns H53:H57 &amp; K53:K57 are neither linked nor their sources are referred.</p> <p>The values used in above</p>

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		<p>private plants only has been submitted on 24/09/2012. The result of this spreadsheet shows a base year clinker benchmark of 85% for CEMII/B-P.</p> <p>Follow up responses</p> <p>a) The naming of cement types on the raw data sheet submitted by some plants to Authorities was in some cases not correct. Some plants (Mugher and Mossobo) stated their products "OPC" when its clinker share is clearly below 95%. Therefore we only aggregated the raw data from plants in a manner that perfectly matches the definition of "Blended Cement" in methodology as well as the Ethiopian cement standard table. i.e all cements types with clinker share above 95% as OPC and all those with clinker share below 95% as blended cement (PPC in this case). Therefore, in case of plants that confused naming (only Mugher and Mossobo) we simply took the clinker share they stated as reference and categorised them where they belong according to the standard, which may seem (OPC+PPC). In reality they are all PPC when the clinker share is below 95% and use pumice.</p> <p>b) Para 48 of CMP decision "Modalities and procedures for a clean development mechanism" there are three alternatives for baseline setting (i.e a, b or c). The approach used in this methodology (ACM0005) for</p>	<p>columns represent the total cement (OPC+PPC) produced while column heading states CEM II-BP only</p> <p>b) Why all the cement plants (including the Government one) manufacturing BC should not be considered as per methodology ACM section 2 .which states" (ii) includes at least 5 other plants with the published data required to calculate BBlend, y;" and (iii) If the region comprises of less than 5 plants producing the relevant cement type, the national market should be used as the default region. Hence the calculated value of the benchmark clinker share is not conservative for each type of cement Please clarify &amp; correct.</p> <p>c) The leakage calculation is not correct. .Please clarify why there is such a large difference in calculation of leakages between the two versions of spreadsheet 7982T as compare to 183337T</p>

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		<p>baseline setting (clinker benchmark blending rate) is based on Para 48c of “Modalities and procedures for a clean development mechanism” which is commonly called “benchmark approach” which states baseline is based on “The average emissions of similar project activities undertaken in the previous five years, in similar social, economic, environmental and technological circumstances, and whose performance is among the top 20 per cent of their category”.</p> <p>Moreover we established our baseline scenario using guidance on page 4/36 of the methodology under “Identification of the baseline scenario” which reads “Projects are considered similar if they are in the same country/region and/or rely on a broadly similar technology, are of a similar scale, and take place in a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing, etc.”</p> <p>The implementation of this in our case is that there are no five private plants in the project region (central Ethiopia). But we didn’t simply chose 95% as benchmark by declaring that no other private plant exists in the region that produce the specific blended cement</p>	<p>DOE’s Further response</p> <p>The value of EFFi (tCo2e/t fuel) used in PDD is 2.42 while in spread sheet it is used 2.62. Please clarify giving source of this value.</p>

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		<p>type. We rather extended the region to take the whole host country as default. Then we found a private plant available about 540 km from project plant, included it and its clinker share considered for benchmark calculation. We considered the annually imported cement as a virtual one plant as per the guidance in the same section. The resulting calculation brings 85% as base year benchmark blending rate for CEMII/B-P.</p> <p>We agreed to voluntarily take a compromise of including all cement plants in the host country, for benchmark calculation which results a base year benchmark blending rate at a very conservative 71.28% for CEMII/B-P and implemented the same in revised PDD and spreadsheet.</p> <p>Regarding why benchmark has been calculated for each cement type of the project activity</p> <p>i) For starting benchmark calculation, Step 2.1 of the methodology states, "Data concerning average blending ratio, annual production and import of the <u>relevant cement type(s)</u> in the region shall be collected for one year prior to the start date of CDM project</p>	

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		<p>activity.”</p> <p>ii) Also on page 19/34, methodology states “In case the project activity consists of production of more than one cement type, the emission reduction shall be calculated above for each cement type i produced. The total emission reduction from the project activity shall be calculated as the sum of emission reductions for all cement types i produced.”</p> <p>iii) This is also consistent with “Different technology” defined in the Additionality tool, supporting us that “different feedstock” results in different technology (example: different cement types using different feedstock additives like pumice, limestone etc). In essence, our project activity uses three different technologies (CEMII/B-P, CEM II/A-L, and CEM IV/B) consistent with the section in description of alternative scenarios.</p> <p>iv) Moreover we have already taken the unnecessarily over conservative route / compromise for CEM II/B-P by considering all plants in the host country rather than taking private plants only, for calculating its benchmark as described in (a) above.</p> <p>c) The remark is perfectly correct. The</p>	

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		<p>previous methodology ACM0005V6 had an algorithm for additional additives transported, that somehow brings this smaller annual leakage value when all parameters are inserted. The revised methodology ACM0005V7.1.0 removed this Leakage algorithm and instead required PPs to use “tool for Project and leakage emissions from road transportation of freight” which was not referred in the previous version. Unfortunately this tool brings higher value when all parameter values are inserted.</p> <p>We have made a review at the Leakage calculation again and reflect on final spreadsheet if there is any change.</p> <p>Further response to further issues stated on DOE response dated 22/10/2012</p> <p>The <u>EFFi</u> parameter is calculated as follows;</p> <ul style="list-style-type: none"> <li>Emission factor from IPCC 2006 default emission factor for stationary combustion in manufacturing industries has been converted into tCO<sub>2</sub>/t fuel using Net Calorific Value of 6250 Kcal/Kg.</li> <li>The fuel taken is Anthracite</li> </ul>	<p>DOE”s Further response</p> <p><u>DOE confirms that PDD and the spreadsheet have been corrected</u> <input checked="" type="checkbox"/></p>



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		<p>coal with its NCV above stated in the EIA/TEFR.</p> <ul style="list-style-type: none"> <li>The value is 2.57 and is uniformly corrected in the PDD and spreadsheet. The value ex post will be based on actual fuel used and monitored.</li> </ul> <p>The revised CERs spreadsheet and PDD V4 dated October 25, 2012 contain these changes.</p>	
CL-09 The estimation of leakages shown in section B 6.4 for the years 2015 to 2018 are not in line with the production plans for the corresponding period. Please clarify.	B.6.3.1	Leakage has been re-estimated using ACM0005 version V07.1.0 and the planned production between 2015 and 2018 have been used for estimation.	DOE's response The estimation is now linked and corrected. <input checked="" type="checkbox"/>
CL-10 It is not clear what are the most current compliance and monitoring requirements of environmental standard mentioned in "Environment and Social impact assessment" as applicable to the project and how the compliance s of the same are going to be achieved.	B.7.2.1	<p>First response</p> <p>We have included a tabular description of the applicable national standard, compliance requirements as well as the planned achievement level for parameters applicable to the cement investment under table 014 in the revised PDD.</p> <p>Follow up response</p> <p>Source is stated as "national standard" in the table but foot note included again. PDD has been revised to include the same</p>	<p>DOE's response</p> <p>The PDD has been revised to include air pollution norms.</p> <p>Please confirm that besides above there are no other environmental protection norms applicable to plant. And kindly give reference to the applicable environment act to the cement project</p> <p>DOE's response</p> <p>DOE's Further response</p> <p>The revised PDD now includes this information hence CAR closed. <input checked="" type="checkbox"/></p>
	C.1.2	First response	DOE's response

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<p>CL 11</p> <p>PP requested to provide supporting evidence to substantiate operational life time of the project activity.</p>		<p>The project activity is fixed ten years. However the operational lifetime of the project is selected conservatively as 16 years as per the “Guidelines on the assessment of investment analysis” version 04 slightly above the average of twenty years and ten years.</p> <p>Follow up response</p> <p>We also recall to the provision of “appropriate” period stated in the GUIDELINES ON THE ASSESSMENT OF INVESTMENT ANALYSIS (Version 05), Guidance 3 which requires that the minimum should be 10 years and the maximum to be 20 years. We have run the IRR spreadsheet for 20 years which is the maximum in the guidance.</p> <p>We have further solicited and received email from the consultant of the project plant implementation (Holtec) and a second opinion letter from the cement plant maintenance contractor (Saboo). The PDD has been revised to reflect the above changes.</p>	<p>The operational life time is to be based on the estimated life time of the plant and machinery. This must be based on the Plant manufacturer’s estimates or the studies carried out on similar type of plants</p> <p>DOE’s Further response</p> <p>PP has provided the confirmation from two independent sources regarding the estimates of Plant life time. Both sources have estimated the minimum lifetime of 20 Years subject to routine annual maintenance activity being carried out at planned intervals. Hence CAR is closed.</p> <p><input checked="" type="checkbox"/></p>
<p>CL-12</p> <p>It is not evident how the communication was made to the stakeholder about the CDM aspects of the proposed project.</p>	E.1.2	<p>First response</p> <p>The stakeholder consultation was conducted before the start date and is still being run as a holistic process running from the TEFR/EIA study till this date in the commissioning process. The expropriation of the limestone site, the</p>	<p>DOE’s response</p> <p>The document submitted by the PP is an invitation received by Derba Midroc Cement to participate in a “ Climate-Resilient Green Economy Sectoral Consultation Meeting” This consultation meeting is neither the project specific nor</p>

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		<p>pumice site, the features of the plant itself and the products (which are all main features of the CDM project) were all discussed with local stakeholders as in the stakeholder consultation evidences submitted to DOE before visit. Further to this, PP's have made consultation on July 29, 2011 with relevant stakeholders (ministries, consultants, contractors etc as stated on invitation letter submitted to DOE) regarding the CDM aspect of the project as a lesson in the consultative sessions held towards development of the Climate Resilient Green Economy strategy of Ethiopian.</p> <p>Restructured PP response to all issues raised by DOE under this CL</p> <p>The Environment Impact Assessment (EIA) of the project which was being conducted during the local consultation period states in chapter 6.2.1.1 that blending CDM project will be pursued and Carbon finance will be sought. In line with the same substantial local stakeholder consultation was conducted regarding all aspects of the development project. The full stakeholder consultation process, participants and photographs are documented under Chapter 7 of the EIA report and have been annexed to the validating DOE.</p>	<p>in line with in line para128 /129 of VVM 2.01. Please provide the details in the PDD along with the supporting evidences such as how stake holders were invited, List of participants who actually attended. Raw records of stakeholder minutes , attendance records</p> <p>DOE's Further response</p> <p>The stake holder consultation was an integral part of EIA. The consultations were carried out in the months of July &amp; August 2007 and subsequent to which the EIA was approved by FDRE.</p> <p>DOE have reviewed the records submitted and now confirms that the stakeholder process meets the requirement of Para 138-139 of VVS 02.0☑</p>

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		<p>In accordance with the same invitations were made to various local stakeholder groups through existing lower level administrative structures (Woredas &amp; Kebeles) and consultations made as follows;</p> <ul style="list-style-type: none"> <li>• Consecutive field trips were taken in August 2007 to these project and the neighbouring areas in order to assess the views and comments of the community and concerned administrative units within and around the project areas. The details of participant stakeholders and actual dates of consultation are provided in table 7.1 and 7.2 while minutes of consultation are annexed to the stakeholder consultation report.</li> <li>• Meetings were held on 11 and 12 July 2007 with the two Ministries.</li> <li>• EIA was subsequently completed in December 2007</li> </ul> <p>Links to a website showing further evidence of this stakeholder consultation also provided as follows;</p> <p><a href="http://www.ifc.org/ifcext/spiwebsite1.nsf/0/E3F4305FC37F09AE852576BA000E2B4A">http://www.ifc.org/ifcext/spiwebsite1.nsf/0/E3F4305FC37F09AE852576BA000E2B4A</a></p>	

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Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		The revised PDDV4 dated October 25, 2012 includes these details.	

## TABLE 4 FORWARD ACTION REQUEST

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

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## APPENDIX B CERTIFICATE OF COMPETENCE



# VALIDATION REPORT

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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 blue ink signature, appearing to read "Adam Simcock", written over a horizontal line.

Chief Executive Officer  
Mr Adam Simcock

# VALIDATION REPORT

CDM VALIDATION REPORT NO. CDM VALIDATION REPORT NO. CCL00072/DMCC/20082012



Vikash Kumar Singh

is hereby certified as a

**Qualified CDM Technical Reviewer**

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

**1.2, 3.1, 13.1**

Awarded: 11 October 2012

  
Chief Executive Officer  
Mr Adam Simcock



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# VALIDATION REPORT

CDM VALIDATION REPORT NO. CDM VALIDATION REPORT NO. CCL00072/DMCC/20082012



Jan Gerrit Schutte

*is hereby certified as a*

**Qualified CDM Technical Expert**

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

**4.1, 8.1, 10.1**

Awarded: 19 June 2012

Chief Executive Officer  
Mr Adam Simcock

Chief Compliance Officer  
Mr Priyesh Ramlall