



VALIDATION REPORT

For the CDM Project Activity

Use of biomass as an alternative fuel for the production of Calcium Oxide

In
Mexico

Report No. 01 997 9105068929

Version No. 07, 2015-05-11

Designated Operational Entity (DOE)

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I. Project description:

Project title:	Use of biomass as an alternative fuel for the production of Calcium Oxide		Report No.: 01 997 9105068929
Host Country:	Mexico		Current revision No.: 07
Methodology:	AM0036 Version 04	<input checked="" type="checkbox"/> Large Scale <input type="checkbox"/> Small Scale	Date of current revision: 2015-05-11 Date of first issue: 2013-06-05
Annual average emission reductions (estimate):			51,166 tCO ₂ e/yr
GHG reducing measure/technology:	The proposed project activity consists in the utilization of biomass residues with no current use as an alternative fuel for the heat generation equipment of the plant of Calidra de Occidente S. A. de C. V. in the production process of Calcium Oxide (CaO).		

Party	Project Participants	Party considered a project participant	Contract party
Mexico (Host)	Calidra de Occidente S.A de C.V.	No	<input type="checkbox"/>
Mexico (Host)	Carbon Solutions de Mexico S.A de C.V.	No	<input checked="" type="checkbox"/>

II. Validation Team:

Validation Team			Role									
Full name	Affiliation TÜV Rheinland	Appointed for Sectoral Scopes (Technical Areas)	Team leader	Acting Team Leader	Local Expert	Team Member (Auditor)	Technical Expert	Acting Tech. Expert	Trainee Auditor	Technical Reviewer	Expert to TR	Trainee TR
Arturo Lemus ¹	Mexico	1.2/ 13.1	X		X							
Guadalupe Avendaño	Mexico	1.2/ 13.1				X						
Libo Ma	China	1.1/ 1.2/ 4.5					X					
Hector Bracamontes	Mexico	1.2							X			
Mr. Jiandong Ma	China	1.1/ 1.2/ 4.5					X					
Mr. Walter Tang	China	1.1/1.2/2.1/2.2/3.1/4.3/4.5								X		
Ms. Cuiping Deng	Beijing	1.2 /5.1 /11.1 /12.1								X		

Validation Phases	Validation Status
<input checked="" type="checkbox"/> Desk Review <input checked="" type="checkbox"/> Follow up interviews <input checked="" type="checkbox"/> Resolution of outstanding issues	<input checked="" type="checkbox"/> Corrective Actions / Clarifications Requested <input checked="" type="checkbox"/> Full Approval and Submission for Registration <input type="checkbox"/> Rejected

III. Validation Report:

Final approval	Released	Distribution
<input checked="" type="checkbox"/>	By: Henri Phan	<input checked="" type="checkbox"/> No distribution without permission from the Client or responsible organizational unit <input type="checkbox"/> Unrestricted distribution
Date: 11/05/2015		

¹ *Please refer to section 2.5 for further details related to the ValidationTeam.

Executive Summary – Validation Opinion

The validation team assigned by the DOE (TÜV Rheinland (China) Ltd.), here after called TRC, is been assigned by “Carbon Solutions de Mexico S.A de C.V” to perform the validation of their project **“Use of biomass as an alternative fuel for the production of Calcium Oxide “**. The validation was performed on the basis of UNFCCC criteria for the Clean Development Mechanism. The scope of the validation is defined as an independent and objective review of the project design document, the project’s baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against CDM Validation and Verification Standard (Version 07.0), Kyoto Protocol requirements, CDM Executive Board/UNFCCC rules. The report is based on the assessment of the project design document undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to document reviews, site visit, and stakeholder interviews, review of the applicable methodology and its underlying formulae and calculations.

Validation methodology and process

The validation has been performed as described in the VVS version 09.0 and constitutes the following steps:

- Publication of the PDD on the UNFCCC website (17/03/2012 – 15/04/2012)
- Desk review of the PDD and the relevant documents
- On-site assessment (07/05/2012 – 08/05/2012)
- Issuance of Validation Report

Validation criteria

The following CDM requirements have been considered:

- Article 12 of the Kyoto Protocol,
- Modalities and procedures for CDM (Marrakech Accords)
- Subsequent decisions by the COP/MOP and CDM Executive Board
- Host country criteria
- Criteria given to provide for consistent project operations, monitoring and reporting.

This project is unilateral and there is no Annex I Party involved in this project. The host part is Mexico and the party fulfills the participation criteria and has approved and authorized the project and the project participant. The DNA from Mexico confirms that the project assists in achieving sustainable development.

The project correctly applies the baseline and monitoring methodology AM0036, version 4.0.0, “Fuel switch from fossil fuels to biomass residues in heat generation equipment”.

The project results in reductions of CO₂ 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 are hence additional to any that would occur in the absence of the project activity.

There is no ODA from Annex I due to there is no Annex 1 involved in this project.

The monitoring plan provides for the monitoring of the project’s emission reductions. The monitoring arrangements described in the monitoring plan are feasible within the project design and it is TRC’s opinion that the project participants are able to implement the monitoring plan.

The proposed project activity consists in the utilization of biomass residues (forestry residues and agroindustrial residues as agave bagasse, sugar cane bagasse and forage maize) with no current use as an alternative fuel for the heat generation equipment of the plant of Calidra de Occidente S. A. de C. V. in the production process of Calcium Oxide (CaO), the project activity will result in reductions of greenhouse gas (GHG) emissions that are real, measurable and give long-term benefits to the mitigation of climate change.

The total emission reductions from the project are estimated to be (358,162) t of CO₂e over a (7) years crediting period, averaging (51,166) t of CO₂e annually. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given the underlying assumptions do not alter.

The validation protocol describes total of (33) findings which include:

- (22) Corrective Action Requests (CARs);
- (11) Clarification Requests (CLs);
- (2) Forward Action Requests (FARs); and all findings have been closed satisfactorily.

All findings in CARs/CLs have been closed satisfactorily, and the highlight issues related to project implementation in FARs will be verified during the first verification of the project activity.

TRC concludes that the CDM Project Activity “**Use of biomass as an alternative fuel for the production of Calcium Oxide**” in Mexico, as described in the PDD (version 14, 30/03/2015), meets all relevant requirements of the UNFCCC for CDM project activities including article 12 of the Kyoto Protocol, the modalities and procedures for CDM (Marrakesh Accords) and the subsequent decisions by the COP/MOP and CDM Executive Board.

The selected baseline and monitoring methodologies (AM0036, Version 4.0.0) are applicable to the project and correctly applied. The TRC therefore requests the registration of the project as a CDM project activity with UNFCCC.

Arturo Lemus (Team Leader)



TÜV Rheinland de Mexico, S.A de C.V.
City, 2015-05-11

Mr. Henri Phan
(DOE Manager)



TÜV Rheinland (China) Ltd.
Beijing, 2015-05-15

Abbreviations

BONDES	Federal Government Development Bond
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CDM PCP	Clean Development Mechanism Project Cycle Procedure
CDM PS	Clean Development Mechanism Project Standard
CDM VVS	CDM Validation and Verification Standard
CER	Certified Emission Reduction(s)
CH ₄	Methane
CL	Clarification request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CaO	Calcium Oxide
DNA	Designated National Authority
DOE	Designated operational entity
EF	Emission Factor
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LoA	Letter of approval
NGO	Non-governmental Organization
LGEEPA	Law of Ecological Equilibrium and Environmental Protection
ODA	Official Development Assistance
PDD	Project Design Document
PP	Project Participant
tCO ₂ e	Tonnes of CO ₂ equivalents
TRC	TÜV Rheinland (China) Ltd.
UNFCCC	United Nations Framework Convention on Climate Change
GWP	Global Warming Potential
VVS	Validation and Verification Standard

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Appendix A: Validation Protocol

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1. Introduction:

The organization “Carbon Solutions de México S.A. de C.V.” has commissioned the DOE TÜV Rheinland (China) Ltd. to perform a validation of the CDM Project Activity **“Use of biomass as an alternative fuel for the production of Calcium Oxide”** in Mexico (hereafter called “the project”). This report summarises the findings of the validation of the project, performed on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. The term “UNFCCC criteria” refers to Article 12 of the Kyoto Protocol, the CDM modalities and procedures.

1.1 Objective:

The purpose of a validation is to have an independent, professional, ethical and fair third party assessment of the project design. In particular, the project's baseline, monitoring plan, and the project's compliance with relevant UNFCCC 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 and its intended generation of certified emission reductions (CERs).

1.2 Scope:

The validation scope is defined as an independent and objective review of the project design document (PDD). The PDD is reviewed against the relevant criteria (see above) and decisions by the CDM Executive Board, including the approved baseline and monitoring methodology. The validation team has, based on the recommendations in the Validation and Verification Standard employed (latest version) a risk-based approach, focusing on the identification of significant risks for project implementation and the generation of CERs.

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

While carrying out the validation, TRC determines if the project activity complies with the requirements of Para 37 of the CDM M&P and also assess the claims and assumptions made in the PDD without limitation on the information provided by the project participants.

The scope of the validation is:

- To apply TRC's own quality management system integrated with the VVS standard along with the recent decisions and guidance provided by the UNFCCC board to determine if the project activity meets all applicable CDM requirements, including those specified in the project standard, relevant methodologies, tools and guidelines and processing the same with CDM project cycle procedure;
- Asses the accuracy, conservativeness, relevance, completeness, consistency and transparency of the information provided by the project participants;
- Determine whether information provided by the project participants are reliable and credible;
- Present information in the form of validation report in a factual, neutral, coherent manner and document all assumptions, provide references to the background material and identify changes made to the documentation;
- Base the findings and conclusions on objective evidence and conduct all validation in accordance with CDM rules and procedures;
- Apply consistent validation criteria in providing expert judgments to the requirements of applicable approved methodologies, tools and also cross check the same with projects of similar characteristics, technology, time period and region; and
- Safeguard the confidentiality of all information's obtained or created during validation.
- Where sampling is involved, the standard for sampling and surveys are applied.

2. Methodology:

The validation consists of the following four phases:

- I A desk review of the project design documents
 - Publication of PDD in UNFCCC for global stakeholder consultation;
 - A review of data and information;
 - Cross checking between information provided in PDD with all necessary means without limitations to the information provided by the project proponent;
- II On-site visit and follow-up interviews with project stakeholders
 - Interviews with relevant stakeholders in host country with personnel's having knowledge with the project development via telephone, email or direct on-site visits;
 - Cross checking between information provided by interviewed personnel with all necessary means without limitations to the information provided by the project proponent;
- III Reference to available information's relating to projects or technologies similar projects under validation and review based on the approved methodology being applied of the appropriateness of formulae and accuracy of calculations.
- IV The resolution of outstanding issues and the issuance of the final validation report and opinion.

The following sections outline each step in more detail.

2.1 Desk Review of the Project Design Documentation:

The following table outlines the documentation reviewed during the validation:

Ref no.	Reference Document
/1/	GSP-PDD Use of biomass as an alternative fuel for the production of Calcium Oxide. Version 01, dated on 05/03/2012. http://cdm.unfccc.int/UserManagement/FileStorage/W9VINPJG7CLUHF53MZTD8B4S1KQ2XE
/2/	Final PDD Use of biomass as an alternative fuel for the production of Calcium Oxide. Version 14, dated on 30/03/2015.
/3/	Host Country Approval / Letter of Approval: Mexico, DNA(Comisión Intersecretarial de Cambio Climático), with reference number #301/2012, dated on 30/04/2012.
/4/	Confirmation from the DNA personnel (Authenticity of LoA), dated on 26/04/2013.
/5/	Modalities of Communication "Use of biomass as an alternative fuel for the production of Calcium Oxide-
/6/	Written confirmation from the PP Calidra (Authenticity of MoC), dated on 19/12/2012.
/7/	Written confirmation from the PP Carbon-solutions (Authenticity of MoC), dated on 19/12/2012.
/8/	Executive Board of the UNFCCC, CDM Validation and Verification Standard (Version 09.0), http://cdm.unfccc.int/filestorage/e/x/t/extfile-20150225165200470-reg_stan01.pdf/reg_stan01.pdf?t=S3R8bm83OHNhfDA2dshiu028X9slxo1qtCOD
/9/	CDM-PDD - Project Design Document form, Version 06.0 http://cdm.unfccc.int/Reference/PDDs_Forms/index.html#ls
/10/	UNFCCC Approved baseline and monitoring methodology AM0036 version 04.0.0 http://cdm.unfccc.int/methodologies/DB/OBDBOHO6HD2U1IO6EIJDODF32WYY3C
/11/	UNFCCC "Tool for the demonstration and assessment of additionality" (Version 07.0.0), EB 70 annex 8. http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf
/12/	UNFCCC "Emissions from solid waste disposal sites" (Version 06.0.1), EB 66 annex 46. http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-04-v6.0.1.pdf
/13/	UNFCCC "Tool to calculate the emission factor for an electricity system" (Version 04.0.0), EB 75 annex 15 http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v4.0.pdf
/14/	UNFCCC "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion" (Version 02), EB 41 annex 11.

	http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-03-v2.pdf
/15/	UNFCCC “Tool to determine the baseline efficiency of thermal or electric energy generation systems” (Version 01), EB 48 annex 12. http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-09-v1.pdf
/16/	UNFCCC “Tool to determine the remaining lifetime of equipment” (Version 01), EB 50 annex 15. http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-10-v1.pdf
/17/	“Project and leakage emissions from road transportation of freight” (version 01.1), EB 70 annex 23 http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-12-v1.1.0.pdf
/18/	UNFCCC “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of a crediting period version” (Version 03.0.1), EB 68 annex 47. http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf
/19/	Planning Project Implementation of Calidra de Occidente S. A. de C. V.
/20/	Feasibility Report from Calidra de Occidente S. A. de C. V., dated on 04/11/2011.
/21/	Economic model and emission reductions spreadsheet, document P115_VAL_400.
/22/	Prior CDM Consideration form of Use of biomass as an alternative fuel for the production of Calcium Oxide, issued on 26/07/2011.
/23/	UNFCCC’s prior CDM consideration form reception confirmation, dated on 17/08/2011.
/24/	DNA’s prior CDM consideration form reception confirmation, dated on 27/07/2011.
/25/	Plant layout with the possible location of the equipments of the project activity Calidra de Occidente S. A. de C. V.
/26/	Calidra de Occidente S. A. de C. V. Specifications for the biomass residues warehouse.
/27/	Calidra de Occidente S. A. de C. V Specification sheet of the Maerz kilns
/28/	Drawing of Electric energy consumption for the biomass silo of Calidra de Occidente
/29/	Drawing of Electric energy consumption for the biomass grinding system of Calidra de Occidente
/30/	Letter from biomass residues expert about the lifetime of the equipment for biomass pre treatment, performed by Projects of Colaboration, dated on 04/06/2012.
/31/	Evidence of commissioning date for the 400 and 600 tpd kiln, provided by Maerz, dated on 15/04/2013.
/32/	Provisional Acceptance certificate for the R4S- 600 tpd lime kiln, provided by Maerz dated on 08/05/2012.
/33/	Technical sheet Maerz (The Maerz Parallel Flow Regenerative Lime Kiln), provided by the manufacturer Maerz, without version and date.
/34/	RX 70 Technical sheet, data Diesel and LP gas forklift trucks, issued by STILL GmbH.
/35/	Biomass Quotation provided by (PREAGRO), Agroforestry Processing Waste, dated on 29/11/2011.
/36/	Petcoke’s invoice provided by (Garcia-Munte Energía of Mexico), dated on 22/09/2010 Invoice number 7644.
/37/	Fuel oil invoice provided by Baeza, S.A of C.V., dated on 09/06/2009. Invoice number 90476
/38/	Map of distance between Calidra de Occidente CaO plant and biomass residues origin.
/39/	Historical production and fossil fuels consumption reports 2008, 2009, 2010.
/40/	Petcoke analysis certificate provided by Garcia Munté Energía of Mexico, dated on 19/02/2010.
/41/	Official journal of the federation, Law of income Tax.
/42/	Report of calorific value of agave, issued by Grupo Calidra, dated on 19/11/2010.
/43/	ANFACAL (National Association of Lime Producers) letter about the number of producers (part 1), dated on 15/06/2012.
/44/	ANFACAL (National Association of Lime Producers) letter about the number of producers (part 2), dated on 15/06/2012.
/45/	Dynamics 2009 Management System
/46/	Means of invitation for stakeholders consultation
/47/	Attendance to stakeholders consultation (Tecolotlán) and (Amatitán), dated on December 5 th and 7 th of 2011.
/48/	Stakeholders consultation report, prepared by Calidra de Occidente S.A de C.V, dated on

	December, 2011.
/49/	Presentation for stakeholders, issued by CO ₂ Solutions , dated on 29/11/2011.
/50/	Impact Assessment Manifest (EIA), issued Calidra de Occidente, dated on November 2011.
/51/	Unique Environmental Licence (Licencia Ambiental Unica, LAU) of Calidra de Occidente S. A. de C. V. issued on January 17 th 2012 through the document N° SGPARN 014.02.02.079/2012, and with the environmental registration number COC741408811. The updated version of such license is in process and is expected to be obtained by the third quarter of 2013.
/52/	NOM-085-SEMARNAT-1994 Mexican Official Norm, issued by (SEMARNAT, Ministry of Environment and Natural Resources).
/53/	Electric Energy bill (from October of 2009 to September of 2010), provided by CFE Federal Electricity Commission.
/54/	Federal Government Development Bond (BONDES, with maturity of 20 years), provided by the Mexican Bank.
/55/	Interest rate from the Bank of Mexico (Banco de México, Banxico)
/56/	Equity Risk Premiums (ERP): Determinants, Estimation and Implications – The 2010 Edition Updated: February 2010, issued by Aswath Damodaran Stern School of Business.
/57/	Emission factor Energy perspective 2008, 2009 and 2010 (Mexico).
/58/	Contract between Maerz and Calidra for the supply of the 400 tpd lime kiln, celebrated issued on 08/0/2008.
/59/	Operational days for the kilns Calidra de Occidente S.A de C.V, dated on 05/09/2010.
/60/	Characteristics of management system to Microsoft Dynamics AX 2009, without version and date.
/61/	Guidelines on Common practice, EB 69 annex 8 version 02.0
/62/	IPCC. Guidelines on National GHG Inventories, 2006 Chapter 1 of Vol. 2 (Energy) http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html
/63/	Drawing with the coordinates based on the location of the kiln 1 (400 tpd) of the project activity.
/64/	Average 2010 MXN to USD exchange rate from x-change rates web page: http://www.x-rates.com/
/65/	UNFCCC Guidelines on the assessment of investment analysis version 5, EB 62 dated on 15/07/2011.
/66/	Energy Secretary (SENER). “Prospectiva del sector eléctrico 2008-2017”, “Prospectiva del sector electric 2009-2024”, “Prospectiva del sector eléctrico 2010-2025”.
/67/	SENER <i>Secretaria de Energia</i> Energy Ministry “National Energy Balance” for years 2009, 2010. Subsecretaría de Planeación Energética y Desarrollo Tecnológico. www.energia.gob.mx
/68/	Biomass residues availability studies carried out by Forestry Technical Services Autlan, dated on September 2011.
/69/	Investmen evidence “Turnkey project quotation”, dated on 20/10/2010, issued by Asistencia Industrial de la Laguna.
/70/	PREAGRO-supplier of biomass and forestry residues, “quotation of forestry residues” dated on 01/10/2010
/71/	Asistencia Industrial de la Laguna, “Engineering and construction "turnkey " of a grinding plant of biomass. Proposal , dated on 20/10/2010
/72/	UNFCCC Standard for Application of the Global Warming Potentials to Clean Development Mechanism Project Activities and Programmes of Activities for the Second Commitment Period of the Kyoto Protocol http://cdm.unfccc.int/filestorage/h/u/N207JC1ZTP6D8G5R3F4UKSAYWMOLBL.pdf/eb69_repan03.pdf?t=aEN8bXI0ZWtkfDBwuoYafNeZUtEVGbhwoMo2 , EB 69 annex 3.
/73/	UNFCCC Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities http://cdm.unfccc.int/Reference/Standards/meth/meth_stan05.pdf , EB 69 annex 4.
/74/	UNFCCC “Glossary of CDM Terms version 07.0, http://cdm.unfccc.int/Reference/Guidclarif/glos_CDM.pdf

/75/	Clean development mechanism project cycle procedure, version 07.0 dated on 01/06/2014. http://cdm.unfccc.int/filestorage/9/6/G/96GN2O5MDZQBWPISUKJ0X8FLEY31V7/eb79_rep_an05.pdf?t=REN8bjdtbHVnfDC0-WtclollXMAcfOgMfMii
/76/	Clean development mechanism project standard, version 07.0 dated on 01/06/2014. http://cdm.unfccc.int/filestorage/V/G/9/VG9BH603NZ1STDROU5YI724ALXQWF8/eb79_rep_an03.pdf?t=ckR8bjdtbHZtfDDvOJHGAAeFWUJ_9Jqj9kh4
/77/	LGEEPA (General Law for the Ecological Equilibrium and Environmental Protection http://www.cnsns.gob.mx/acerca_de/marco/reglamentos/equilibrio_ecologico_impacto_ambiental.pdf .
/78/	Guidelines on the assessment of investment analysis” version 05, http://cdm.unfccc.int/Reference/Guidclarif/reg/reg_guid03.pdf
/79/	Newspaper, “El Universal” that provides the price of Diesel it is dated on 08/10/2010
/80/	Signature of the contract for the foundation’s construction for the 600 tpd kiln. Construction contract at fixed price and close fit, contract celebrated on one hand by Calidra de Occidente, S.A. de C.V. represented by José Antonio Hernández Liñán as legal representative, which will be denominated "owner of the construction" for contract purposed; and on the other hand Grupo Firmek, S.A. de C.V., represented by Edna Nayeli Senties Meinecke as legal representative. Starting date of the project activity
/81/	MAERZ, “The MAERZ Parallel flow regenerative lime kiln” http://maerz.com/downloads/downloads_brochures/pfr.pdf
/82/	Gerardo Pérez Cortés Moreno, “Technical expert opinion regarding the technical lifetime of operational equipments” Letter dated on 04/06/2012

2.2. Follow-up Interviews with Project Stakeholders:

TÜV Rheinland validation team carried out an on-site visit dated (7-8/05/2012) and performed interviews with the project representatives and stakeholders. The site visit was conducted to validate the accuracy and completeness of the project description as specified under webhosted PDD.

During the site visit, the validation team reviewed the available project activity designs, feasibility studies, documentation check and comparison analysis with equivalent projects as appropriate.

Prior to the interview salient points to be discussed were planned. Date of interview, interviewee and points discussed are given in the following table.

	Date	Name	Organization	Topic
/i/	7-8/05/2012	Jorge Arturo Gil R.	Process Coordinator	<ul style="list-style-type: none"> ✓ General description of the Project activity ✓ Technology to be applied ✓ Description of the baseline scenario ✓ Monitoring parameters ✓ Monitoring plan
/ii/	7-8/05/2012	Miguel Angel Molina	Sustainable development coordinator	<ul style="list-style-type: none"> ✓ General description of the Project activity ✓ Technology to be applied ✓ Environmental issues.
/iii/	7-8/05/2012	Valentin Pizano Chavez	Maintenance Responsible	<ul style="list-style-type: none"> ✓ General description of the Project activity ✓ Technology to be applied ✓ Monitoring parameters ✓ Monitoring plan
/iv/	7-8/05/2012	Fabian López Hueso	Quality Coordinator	<ul style="list-style-type: none"> ✓ General description of the Project activity ✓ Technology to be applied ✓ Monitoring parameters ✓ Monitoring plan
/v/	7-8/05/2012	Miguel Chavarría	CDM Consultant	<ul style="list-style-type: none"> ✓ General description of the Project activity ✓ Technology to be applied ✓ Financial and financial evaluation. ✓ CDM prior consideration ✓ Application of the baseline and monitoring methodology ✓ Description of the baseline scenario ✓ Additionality ✓ Emission reductions formulae and calculations ✓ Monitoring parameters ✓ Monitoring plan ✓ Duration of project activity ✓ Environmental issues. ✓ Stakeholders consultation
/vi/	7-8/05/2012	Mario Brito	Sustainable Development Manager	<ul style="list-style-type: none"> ✓ General description of the Project activity ✓ Technology to be applied

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

2.3 Resolution of Outstanding Issues:

The objective of this phase of the validation is to resolve any outstanding issues (issues that require further elaboration, research or expansion) which need be clarified prior to TÜV Rheinland's positive conclusion on the project design. In order to ensure transparency a validation protocol is customized for the project. The protocol shows in transparent manner criteria (requirements), means of validation and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organizes, details and clarifies the requirements a CDM project is expected to meet CDM requirements;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.
- It ensures that the issues are accurately identified, formulated, discussed and concluded in the validation report.
- It ensures the determination of achieving credible emission reductions from the project activity.

The validation protocol consists of three tables. The different columns in these tables are described in the figure below. The completed validation protocol for this project is enclosed in Appendix A to this report.

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

- Mistakes have been made with a direct influence the ability of the project activity to achieve on project results like real, measurable, verifiable and additional emission reductions;
- CDM and/or methodology specific requirements have not been met; or
- There is a risk that the project would not be accepted as a CDM project or that emission reductions will not be certified.

A request for clarification (CL) may be used where additional information is needed to fully clarify an issue.

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.

Validation Protocol Table 1: Validation requirements				
Checklist Question	Reference	Means of Validation (MoV)	Comment	Draft and/or Final Conclusion
The various UNFCCC requirements as specified in the VVS are linked to checklist questions the project should meet. The checklist is organized in different sections, following the logic of the VVS.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of validation are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (OK), or a corrective action request (CAR) due to non-compliance with the checklist question (See below). A request for clarification (CL) is used when the validation team has identified a need for further clarification.

Validation Protocol Table 2: List of Requests for Corrective Action (CAR) and Clarification (CL)			
Draft report clarifications and corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Validation conclusion
If the conclusions from the draft Validation are either a CAR or a CL, these should be listed in this section.	Reference to the checklist question number in Table 2 where the CAR or CL is explained.	The responses given by the project participants during the communications with the validation team should be summarized in this section.	This section should summaries the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".

Table 3: List of forward action requests (FARs)			
FAR number	Reference	Summary of project owner response	Validation team conclusion
Forward action request (FAR) to be raised during validation to highlight issues related To project implementation that requires review during the first verification of the project activity. FARs Shall not relate to the CDM requirements for registration.	Reference to the checklist question number in Table 2 where the CAR or CL is explained.	The responses given by the project participants during the communications with the validation team should be summarized in this section.	This section should summaries the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".

Figure 1. Validation protocol tables

2.4 Internal Quality Control:

The final validation report underwent a technical review by a qualified independent reviewer before requesting registration of the project activity. The technical review was performed by a technical reviewer qualified in accordance with TÜV Rheinland's qualification scheme for CDM validation and verification that meets the criteria of EB guidelines for qualification.

2.5 Validation Team:

Before the assessment begins, members of the validation team are ensured to cover the technical area(s), sectoral scope(s) and relevant host country experience including local language ability for evaluating the CDM project activity. The qualification of the team is as per the criterias defined by the EB guidelines for qualification.

Validation Team			Type of Involvement						
Full name	Affiliation TÜV Rheinland	Appointed for Sectoral Scopes (Technical Areas)	Supervising the work	Desk review	Site Visit + Interview	Report and protocol Writing	Technical Expert Input	Reporting Support	Technical Reviewer
Arturo Lemus*	Mexico	1.2/ 13.1	X	X	X	X			
Guadalupe Avendaño	Mexico	1.2/ 13.1						X	
Libo Ma**	China	1.1/ 1.2/ 4.5			X		X	X	
Hector Bracamontes***	Mexico	1.2		X	X				
Mr. Jiandong Ma	China	1.1/ 1.2/ 4.5					X		
Mr. Walter Tang	China	1.1/1.2/2.1/2.2/3.1/4.3/4.5/13.1							X
Ms. Cuiping Deng ^{iv}	Beijing	1.2, 4.1, 4.5, 5.1, 8.2, 10.2, 11.1, 12.1							X

* Ms. Guadalupe Avendaño acted as Team Leader from the beginning of the validation process until 03/05/2012 and the role of Team Leader was taken by Mr Arturo Lemus.

**Mr. Ma Libo left TUV Rheinland since 28 April 2013, his role as Technical Expert has been taken over by Mr. MA Jiandong.

***Mr Hector Bracamontes left TUV Rheinland since 10 Jan 2013

^{iv} Ms Cuiping Deng left the company since November the 1st 2014 and the role of Technical Reviewer was taken by Mr Walter Tang.

3. Validation Findings:

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

The final validation findings relate to the project design as documented and described in the revised and resubmitted project design documentation.

3.1 Approval and Participation:

3.1.1 Letter of Approval:

The CDM project activity involves two project participants from the host party (Mexico), Calidra de Occidente S. A. de C. V. and Carbon Solutions de México S. A. de C. V.

No Annex I Party involved in this project.

Validating DOE has received the Letter of Approval /3/ which was provided by project participant as part of the desk review process.

The Letter of Approval was validated by means of (confirmed through email communication dated on 26/04/2013 with the DNA personnel (Lucrecia Martin Chávez Assistant Director for Climate Change Projects) /4/). After the validation the LoA is considered to be valid for the CDM project activity

The below table summarizes the project participants and parties involved. The authenticity of the letters of approval has been validated by TÜV Rheinland validation team.

These LoA(s) are therefore regarded as valid and meeting the requirements.

Project participants	Calidra de Occidente S. A. de C. V. (Private entity) Carbon Solutions de México S. A. de C. V. (Private entity)
Parties involved	Mexico Host
APPROVAL	
LoA received	Yes
Date of LoA	2012-04-30
Reference to document	Ref. # 301/2012
LoA received from	PP
Validation of authenticity	By e-mail from DNA /4/
Validity of LoA	Valid
PARTICIPATION	
Party is party to Kyoto Protocol	Yes
Voluntary participation	Yes
Diversion of official development aid towards host country	N/A
Project contribution to Sustainable Development	Yes

There is no ODA from Annex I due to there is no Annex 1 involved in this project.

The validation team confirms that the information related to the letter of approval as mentioned in the above table is authentic. The validation team has confirmed the same through email communication dated on 26/04/2013 with the DNA personnel (Lucrecia Martín Chávez Assistant Director for Climate Change Projects) /4/. The entire project participants listed in the tabular form of the PDD have obtained the letter of approval from their respective DNA.

3.1.2 Modalities of Communications:

Requirement of MOC	Criteria fulfilled	Determination by the validation team
Is the focal point identified	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Calidra de Occidente S. A. de C.V. has been identified as the focal point in the MoC /5/ for: <ul style="list-style-type: none"> a) Authority to instruct the secretariat and communicate with the CDM EB on allocation/forwarding of CERs; b) Authority to request the addition of project participants and/or to communicate any voluntary withdrawal and to update contact details of project participants (includes changes in company's name and legal status, addressed, etc) Communication with the secretariat and the CDM EB on matters related to registration and/or issuance.
Is the MOC signed by all project participant (including focal point identified entity/personal)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Yes, the MoC is signed by all project participants (focal point included).
Is the written confirmation obtained by the PP's stating the authorization,	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	A written confirmation has been provided from the each private and/or public entity(ies)

specimen signatures and personal details, employment status are valid and accurate?		project participants Calidra de Occidente S. A. de C. V. (Private entity) and Carbon Solutions de México S. A. de C. V. (Private entity) /6/ and /7/.
Is MOC received by the validation team from the PP with whom DOE has the contractual relationship?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Yes, the MoC was received from the contractual entity.

The validation team confirms that the applicable latest template is been employed by the project participant for the MOC. The MOC is been received from the DOE's contractual project participant. All the personal who have duly signed the MOC are been confirmed from the written communication by the project proponent regarding their personal identity, specimen signatures and employment status,

3.2 Project Design Document:

The Project Design Document is based on the currently valid PDD template and is completed in accordance with the applicable guidance document /9/.

Name	Version	Date	CDM Relevance
PDD – Use of biomass as an alternative fuel for the production of Calcium Oxide.	1.0	05-03-2012	GSP PDD /1/
PDD – Use of biomass as an alternative fuel for the production of Calcium Oxide.	2.0	25/06/2012	PDD addressing second round CARs and CL
PDD – Use of biomass as an alternative fuel for the production of Calcium Oxide.	3.0	28/08/2012	PDD addressing third round CARs and CL
PDD – Use of biomass as an alternative fuel for the production of Calcium Oxide.	4.0	05/10/2012	PDD addressing fourth round CARs and CL
PDD – Use of biomass as an alternative fuel for the production of Calcium Oxide.	5.0	21/12/2012	PDD addressing fifth round CARs and CL
PDD – Use of biomass as an alternative fuel for the production of Calcium Oxide.	6.0	18/02/2013	PDD addressing sixth round CARs and CL
PDD – Use of biomass as an alternative fuel for the production of Calcium Oxide.	7.0	25/04/2013	Minnor corrections performed by the PP.
PDD – Use of biomass as an alternative fuel for the production of Calcium Oxide.	7.2	22/05/2013	PDD addressing 1 st round of CARs and CLs from TR Revision.
PDD – Use of biomass as an alternative fuel for the production of Calcium Oxide.	9	07/08/2013	PDD addressing 2 nd round of CARs and CLs from TR Revision
PDD – Use of biomass as an alternative fuel for the production of Calcium Oxide	12	01/04/2014	First version submitted to requesting registration
PDD – Use of biomass as an alternative fuel for the production of Calcium Oxide	13	18/11/2014	Final Version submitted to requesting registration.

3.3 Project Description:

The project activity will comprise the utilization of biomass residues (forestry residues and agroindustrial residues as agave bagasse, sugar cane bagasse and forage maize) currently not used as an alternative fuel for the heat generation equipment of the plant of Calidra de Occidente S. A. de C. V. in the production process of Calcium Oxide (CaO). With the implementation of this project activity, the emission of a while quantity of greenhouse gases product of the combustion of fossil fuels (almost only petcoke with a minor percentage of fuel oil and diesel), as per historical production and fossil fuel consumption reports /39/, correctly assessed by the audit team will be avoided, estimated amount of annual average GHG emission reductions 51,166 t CO₂e.

This entity has considered an Operation and Maintenance Department that will be responsible of the proper operation and maintenance of the project activity as per correctly established in section B.7.1 of the PDD /2/. The project activity will be located in the municipality of Tecolotlán in Jalisco. The project activity will be

located within Calidra de Occidente S.A. de C.V. facilities with the following coordinates: 20.1954 and -103.9883, as per Drawing with the coordinates based on the location of the kiln 1 (400 tpd) of the project activity /63/.

The project activity description has been validated by means of a site visit carried out to the place where the activity will be constructed and implemented as well as by means of a technical assessment of the technology that will be used in the implementation of the facility. The scenario prior the implementation of the proposed project activity is:

A CaO plant with an extraction capacity of 400 tph, a crushing with capacity of 350 tph and three different calcination areas;

The first one comprises 6 forced draught traditional kilns (2 of 90 tpd and 6 of 80 tpd)

The second has 2 vertical kilns of 150 tpd each

The third had only one Maerz kiln of 400 tpd (the one to be retrofitted as part of the project activity to be capable of using forestry and agroindustrial residues as fuels)

Therefore, the proposed project activity includes:

The existing Maerz kilns of 400 tpd (The equipment started operations on December of 2009) and will be retrofitted for the use of forestry and agroindustrial residues and the procurement, construction and installation of the new maerz kiln of 600 tpd capacity (the one that started operations on April of 2012). Both equipments will have the option of using forestry and agroindustrial residues.

Historical production and fossil fuels consumption have been used to cover the energy requirements (pet coke, fuel oil and diesel), correctly assessed through production records covering, since the starting date of the project has been established in March 18th of 2011 the 2008-2010 period has been chosen as the most recent three years period applicable for the analysis of the historical data for determining the baseline emissions and estimate the emissions reduction calculation, this information was assessed through the signature of the contract for the foundation's construction for the 600 tpd kiln /80/.

The assessment was carried out by checking the technical description of the heat generation equipments considered within the boundary of the project activity are the 2 Maerz kilns: one of 400 tpd to be retrofitted for the use of biomass residues, and a new 600 tpd already enabled with the option of the use of use of biomass residues. Specification sheets of the Maerz Kilns have been correctly provided to the DOE /27/.

The project duration has been considered to be the same of the project lifetime: 20 years, this according to the determination of the remaining lifetime of the Maerz kilns as per manufacturer's information "the first Maerz PFR-kilns were built more than 35 years ago and are still operating" This information is considered be a strong evidence by the DOE fulfilling the "Tool to determine the remaining lifetime of equipment" version 01 which claims: "The tool provides guidance to determine the remaining lifetime of baseline or project equipment. The tool may, for example, be used for project activities which involve the replacement of existing equipment with new equipment or which retrofit existing equipment as part of energy efficiency improvement activities."

"Project participants may use one of the following options to determine the remaining lifetime of the equipment:

- a) Use manufacturer's information on the technical lifetime of equipment and compare to the date of first commissioning;
- b) Obtain an expert evaluation;
- c) Use default values."

Since both kilns (the 400 tpd kiln to be retrofitted and the new 600 tpd kiln), have recently started operations, 2009 and 2012 respectively. The lifetime was validated and cross-checked by means of the technical brochure /81/ and the financial model provided by the project participant /21/, also an a letter of a technical expert was obtained to support the evidence regarding the lifetime of the project activity /82/

The crediting time has been set as a renewable seven years period starting in 01/07/2015.

It is TÜV Rheinland's opinion that the project description in section A.2 of the PDD has been accurately described.

Starting date of project	Expected project operational lifetime	Crediting period
18/03/2011	20 years	Seven years renewable

Herewith, the Validation Team summarizes major changes between webhosted PDD and final version of PDD for submission as follows:

Subject	Webhosted PDD	Correction to webhosted PDD in the final PDD submission for registration with DOE assessment and reason of acceptance.
PDD (project title / participants involved/ project location /project technology etc.)	<ul style="list-style-type: none"> Version number: 1 /1/ Issuance date: 05/03/2012 Project Location: Format dates and geographic coordinates presented in the GSP-PDD were not presented as per er Guidelines form for completing PDD and UNFCCC rules. Project technology: Further details related to heat generation equipment and process flow diagram were missing in the GSP –PDD. 	<ul style="list-style-type: none"> Version number: 13 /2/ Issuance date: 18/11/2014 Format dates and geographic coordinates were corrected in the PDD Format dates and geographic coordinates were corrected in the latest version of the PDD, as per Drawing with the coordinates based on the location of the kiln 1 (400 tpd) of the project activity /63/. Further details related to the project description was added in the latest version of the PDD and correctly assessed. Hence it is concluded that the information is complete and accurate.
Methodologies and tools applied (scope and version numbers)	<p>Approved baseline and monitoring methodology AM0036: "Fuel switch from fossil fuels to biomass residues in heat generation equipment" version 04.0.0.</p> <p>Tools referenced in this methodology:</p> <ul style="list-style-type: none"> "Tool for the demonstration and assessment of additionality" version 6.0.0 "Emissions from solid waste disposal sites" version 06.0.0; "Tool to calculate the emission factor for an electricity system" version 02.2.1; "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion" version 02; "Tool to determine the baseline efficiency of thermal or electric energy generation systems" version 01; "Tool to determine the remaining lifetime of equipment" version 01: 	<p>No changes in the version of the methodology were performed in the latest version of the PDD.</p> <p>Following tools were updated in the latest version of the PDD as per latest version available:</p> <ul style="list-style-type: none"> "Tool for the demonstration and assessment of additionality" version 7.0.0 "Emissions from solid waste disposal sites" version 06.0.1; "Tool to calculate the emission factor for an electricity system" version 4.0 "Project and leakage emissions from road transportation of freight" version 1.1.0.

	<ul style="list-style-type: none"> • “Project and leakage emissions from road transportation of freight” version 1.0; • “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of a crediting period version” 03.0.1.” 	
CER calculations (formula applied/ amount of emission reduction)	As per addressed in the GSP-PDD the emission reductions stated were 92,577 t CO ₂ e.	As per latest version of the PDD the estimated amount of annual average GHG emission reductions will be 50,424 t CO ₂ e. In accordance with the information provided by the PP the significant reduction has been produced by the use of more accurate information and a more conservative approach, and this was based on the latest amendments in some parameters used in the Emissions Reduction calculation during the validation process (e.g. quantity of fossil fuels used in the most recent historical three years period).
Additionality: (Benchmark / input values/analysis type/project start date/IRR or NPV values etc.)	<ul style="list-style-type: none"> • No table for input values for the financial model in Sub-step 2c section of the PDD. • No references for the table with the input values of the financial model. • Salaries for workers were not added in the variable of O&M costs. • Costs that are more than 20% of the total project costs were not correctly addressed in the sensitivity analysis. 	<ul style="list-style-type: none"> • Main input values have been added in section B.5 of the latest version of the PDD. • References of input values used in the financial model have been added in the latest version of the PDD. • Salaries have been added in the latest version of the PDD. • The Project “activity costs” have been included in the sensitivity analysis.
Monitoring (parameters / frequency)	Information related to the calibration frequency, monitoring equipment accuracy and localization were not included in the section B.7.1 of the GSP-PDD, as per Guidelines for completing CDM PDD /9/.	Information related to the calibration frequency, monitoring equipment accuracy and localization have been correctly added for each variable in the section B.7.1 of the latest version of the PDD, as per Guidelines for completing CDM PDD /9/.
Crediting period (type / start date)	01/01/2014	01/07/2015
<p>Please refer to Appendix A of this report for details of each change between webhosted PDD and the final PDD for submission. The Validation Team has carried out the validation process based on the Webhosted PDD and raised CARs/CLs against the project by issuing the validation protocol.</p> <p>With the updated information and corrections done on final PDD, the PP has addressed all the CARs /CLs that were raised by the Validation Team.</p> <p>It is concluded that the Validation Team has reviewed the project in line with the VVS (version 09.0) and all the evidence, corrections, justifications and updating done on the final PDD with respect to CARs /CLs raised are accepted and closed by the Validation Team, issuing the positive validation opinion for project registration. A FAR 1 is further issued to the DOE verification team to check the implementation and operational completeness during the first verification.</p>		

TÜV Rheinland validation team considers the project description of the project contained in the PDD to be complete and accurate. The PDD complies with the relevant methodology, tools, forms and guidance at the time of PDD submission for registration.

3.4 Baseline and Monitoring Methodology:

3.4.1 Applicability of the selected methodology to the project activity

The validation team determined the applicability of methodology AM0036 (version 04.0.0) as follows:

Applicability criteria of the methodology (AM0036), Version 04.0.0	Criteria fulfilled	Determination by the validation team
Retrofit of existing heat generation equipment. The project activity is the retrofit of existing heat generation equipment. The retrofit is made to the equipment to enable (a) the use of biomass residues or (b) an increase in the use of biomass residues beyond historical levels, which would not be technically possible in any of the existing heat generation equipment without a retrofit or replacement.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	This condition is not applicable to the project activity because the project consists to retrofit the existing heat generation equipment and the installation of new equipment with the adequate technology to use biomass residues (agricultural and forestry) with no current use as an alternative fuel for the heat generation equipment of the plant of Calidra de Occidente S. A. de C. V. in the production process of Calcium Oxide (CaO), as was correctly assessed through Historical production and fossil fuel consumption /39/.
Replacement of existing heat generation equipment. The project activity involves the replacement of existing heat generation equipment by new heat generation equipment that fire(s) biomass residues and, where applicable, fossil fuels. The replacement shall (a) enable the use of biomass residues or (b) enable an increase in the use of biomass residues beyond historical levels, which would not be technically possible in any of the existing heat generation equipment without a retrofit or replacement.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	During the site visit it was confirmed that project activity will consists consists to retrofit the existing heat generation equipment and the installation of new equipment. This condition does not apply to the project activity since project activity does not involve the replacement of existing heat generation equipment by new heat generation equipment that fire(s) biomass residues and, where applicable, fossil fuels
Installation of new heat generation equipment. The project activity is to increase the heat generation capacity by installation of new heat generation equipment that fire(s) biomass residues and, where applicable. The use of biomass residues or an increase in the use of biomass residues beyond historical levels would not be technically possible without a retrofit or replacement of the existing heat generation equipment or the installation of a new heat generation equipment. The procedure to determine the most plausible baseline scenario results in that the same fossil fuel type(s) as used in the existing heat generation equipment, would be used in the new heat generation equipment in the absence of the CDM project activity.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	During the site visit it was confirmed that project activity will consists consists to retrofit the existing heat generation equipment and the installation of new equipment. This condition does not apply to the project activity since it is not capacity addition by installation of new heat generation equipment that fire(s) biomass residues and, where applicable, fossil fuels.
Installation of new heat generation equipment and retrofit and/or replacement of existing heat generation equipment. The project activity involves: (a) An increase in the heat generation capacity by installation of new heat generation equipment that fire(s) biomass residues and, where applicable fossil fuels; and (b) The retrofit of existing heat generation	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	This condition is applicable to the project activity due to due to the retrofitting of existing heat generation equipment and the installation of new equipment with the adequate technology to use biomass residues.

Applicability criteria of the methodology (AM0036), Version 04.0.0	Criteria fulfilled	Determination by the validation team
<p>equipment and/or the replacement of existing heat generation equipment by new heat generation equipment that fire(s) biomass residues and, where applicable fossil fuels.</p> <p>The use of biomass residues or an increase in the use of biomass residues beyond historical levels would not be technically possible without a retrofit or replacement of the existing heat generation equipment or the installation of new heat generation equipment. The procedure to determine the most plausible baseline scenario results in that the same fossil fuel type(s) as used in the existing heat generation equipment would be used in the new heat generation equipment in the absence of the CDM project activity.</p>		

The proposed project activity qualifies for the 4th scenario due to the retrofitting of existing heat generation equipment and the installation of new equipment with the adequate technology to use biomass residues.

Approved baseline and monitoring methodology AM0036 “Fuel switch from fossil fuels to biomass residues in heat generation equipment” (version 04.0.0) /10/ and tools Tool for the demonstration and assessment of additionality” (Version 07.0.0) /11/, Emissions from solid waste disposal sites” (Version 06.0.1) /12/, “Tool to calculate the emission factor for an electricity system” (Version 4.0) /13/, “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion” (Version 02) /14/, “Tool to determine the baseline efficiency of thermal or electric energy generation systems” (Version 01) /15/, “Tool to determine the remaining lifetime of equipment” (Version 01) /16/, “Project and leakage emissions from road transportation of freight” (version 1.1.0) /17/, “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of a crediting period version” (Version 03.0.1) /18/ have been applied for the proposed project activity. The methodology is applicable to project activities that switch from use of fossil fuels to biomass residues in heat generation equipment. The Project activity consists in the utilization of biomass residues (agricultural and forestry) with no current use as an alternative fuel for the heat generation equipment of the plant of Calidra de Occidente S. A. de C. V. in the production process of Calcium Oxide (CaO). With adequate technology the emission of a vast quantity of greenhouse gases product of the combustion of fossil fuels (almost only petcoke with a minor percentage of fuel oil and diesel) will be avoided.

“The biomass residues used in the project activity may be produced on-site (e.g. if the project activity is based on the operation of a power plant located in an (agro-) industrial plant generating the biomass residues), or they can be obtained off-site from the nearby area, specific suppliers or purchased from a market”.

Hence, the the biomass residues are obtained from suppliers from the nearby area, as was correctly assessed through Biomass Quotation provided by (Preago, and Agroforestry Processing Waste /35/.

The methodology is applicable under the following conditions:

Applicability criteria of the methodology (AM0036), Version 04.0.0	Criteria fulfilled	Determination by the validation team
<p><i>The heat generated in the heat generation equipment is:</i></p> <ul style="list-style-type: none"> • <i>Not used for power generation; or</i> • <i>If power is generated using the heat generated by the heat generation equipment, it is not increased as a result of the project activity, i.e.:</i> 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>As was described The heat generated in the kilns included in this project activity is not and will not be used for power generation, since it will be transferred directly for the clinker manufacturing process.</p>

Applicability criteria of the methodology (AM0036), Version 04.0.0	Criteria fulfilled	Determination by the validation team
<p>a) The power generation capacity installed remains unchanged due to the implementation of the project activity and is maintained at the pre-project level throughout the crediting period; and</p> <p>b) The annual power generation during the crediting period is not more than 10% larger than the highest annual power generation in the most recent three years prior to the implementation of the project activity”.</p>		
<p>“The use of biomass residues or increasing the use of biomass residues beyond historical levels is technically not possible at the project site without a significant capital investment in:</p> <ul style="list-style-type: none"> • Either the retrofit or replacement of existing heat generation equipment or the installation of new heat generation equipment; or • Establishing a new dedicated biomass supply chain for the purpose of the project activity (e.g. collecting and cleaning contaminated new sources of biomass residues that could otherwise not be used for energy purposes). 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>As correctly reflected in the financial model from the PP a significant investment is required mainly for the retrofitting of the existing 400 tpd lime kiln and the acquisition of the new new Maerz kiln of 600 tpd (that started operations on April of 2012) already enabled with the option of the use of use of forestry and agroindustrial residues.</p>
<p>“Existing heat generation equipment at the project site has either not used any biomass or has used only biomass residues (but no other type of biomass) for heat generation during the most recent three years prior to the implementation of the project activity”</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>As per observed during the site visit neither biomass nor biomass residues have been used in the existing heat generation equipment during the most recent three year period prior to the implementation of the project activity, as was correctly assessed through historical production and fossil fuel consumption /39/.</p>
<p>“No biomass types other than biomass residues, as defined above, are used in the heat generation equipment during the crediting period. Fossil fuels may be co-fired in the heat generation equipment, however the amount of fossil fuels co-fired shall not exceed 50% of the total fuel fired on an energy basis. Refuse Derived Fuel (RDF) and Refuse Plastic Fuel (RPF) can also be co-fired in the equipment, but for the purpose of this methodology they shall be considered as fossil fuels.”</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>As correctly confirmed by the assessment team the project activity has been developed considering a substitution of fossil fuels with biomass residues a range from 50% to 70% on energy basis (60% has been chosen as the average expected value for the whole crediting period and is the one to be used for the analysis of the proposed project activity).</p>
<p>“For projects that use biomass residues from a production process (e.g. production of sugar or wood panel boards), the implementation of the project shall not result in an increase of the processing capacity of raw input (e.g., sugar, rice, logs, etc.) or in other substantial changes (e.g.,</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>As was correctly stated in the PDD No substantial changes are expected to occur in the process derived from the use of biomass residues, neither in the processing capacity of raw input nor in the product’s final specifications.</p>

Applicability criteria of the methodology (AM0036), Version 04.0.0	Criteria fulfilled	Determination by the validation team
<i>product change) in this process”.</i>		
<i>“The biomass residues used at the project site, i.e. the site where the project activity is implemented, are not be stored for more than one year.”</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	As correctly confirmed by the assessment team during the site visit the biomass residues stock estimate will be enough for only two months, therefore the biomass residues used by the project activity will never reach the one year limit mentioned by this applicability condition.
<i>In case of project activities that involve the replacement or retrofit of existing heat generation equipment, emission reductions may only be accounted until the time when the existing equipment would have reached the end of its technical time in the crediting period, i.e. after the point in time when the existing equipment would have to be replaced due to the expiry of its technical lifetime in the baseline scenario, emission reductions cannot be accounted. For the purpose of demonstrating this applicability condition, project participants should determine and document the remaining lifetime of each unit of the existing heat generation equipment in accordance with the “Tool to determine the remaining lifetime of equipment”. In the case of several existing units with a different remaining lifetime, the shortest lifetime among the units should be used to determine the point in time until which CERs can be claimed.</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	For the current project activity a significant investment is required mainly for the retrofitting of the existing 400 tpd lime kiln, and the acquisition of the new new Maerz kiln of 600 tpd (that started operations on April of 2012) already enabled with the option of the use of use of forestry and agroindustrial residues. Such equipments will be needed as part of the forestry and agroindustrial residues feeding system, which has a lifetime of 20 years as minimum, Additionally, the installed kilns included as part of the project activity have an operational lifetime of 35 years and taking into consideration the commissioning date of the oldest (the 400 tpd kiln), which is December of 2009, its remaining lifetime will be at least of 31 years.
<i>“No significant energy quantities, except from transportation or mechanical treatment of the biomass residues, are required to prepare the biomass residues for fuel combustion, i.e. projects that process the biomass residues prior to combustion (e.g., esterification of waste oils) are not eligible under this methodology;</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The biomass residues will not be affected significantly by any major process prior to combustion. The biomass residues will be transported by trucks to the project site. Both, energy use in the mechanical treatment and fossil fuel use in the transportation will be taken into account as project emissions, as correctly assessed through Economic and ERs spreadsheet /21/.
<i>“The biomass residues are directly generated at the project site or transported to the project site by trucks”.</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The biomass residues will be transported to the project site by trucks /21/.
<i>“Furthermore, this methodology is only applicable if the most plausible baseline scenario(s):</i> <ul style="list-style-type: none"> • <i>For heat generation is either case H2 or case H5; and</i> • <i>For the use of biomass residues is case B1, B2, B3, B4 and/or B5. If case B5 is the most plausible scenario, the methodology is only applicable if:</i> <ol style="list-style-type: none"> <i>a) The plant where the biomass residues would be used as feedstock in the absence of the project activity</i> 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>As was correctly observed during the site visit for this condition, the most plausible baseline scenario is H5,” the continued operation of the existing unit(s) using the same fuel mix or less biomass residues as in the past AND installation of new heat generation equipment that is/are fired with the same fuel type(s) and the same fuel mix (or a lower share of biomass) as the existing equipment”, and for the use of biomass residues the most plausible scenarios are B1 and B3:</p> <p>B1: The biomass residues are dumped or left to decay under mainly aerobic conditions. This applies, for example, to dumping and decay of biomass residues on fields;</p>

Applicability criteria of the methodology (AM0036), Version 04.0.0	Criteria fulfilled	Determination by the validation team
<i>can be clearly identified throughout the crediting periods;</i> b) <i>The fuels used as substitutes for the biomass residues at that plant can be monitored by project participants."</i>		B3: The biomass residues are burnt in an uncontrolled manner without utilizing them for energy purposes;
<i>"The applicability conditions outlined in the tool "Emissions from solid waste disposal sites" version 06.0.0, in addition to the above listed applicability conditions, apply if:</i> <ul style="list-style-type: none"> <i>• CH₄ emissions, from the treatment of biomass residues, in the baseline are included;</i> <i>• Where case B2 is identified as the most plausible baseline scenario for the use of biomass residues."</i> 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	For this project activity no CH ₄ emissions from the treatment of biomass residues are taken into account and B2 is not the most plausible scenario.

In addition, the applicability conditions of all other tools apply.

The validation team determined that the applicability conditions of all the tools mentioned in the methodology AM0036 version 04.0.0 are taken into account in the current project activity.

The assessment of the project's compliance with the applicability criteria of the methodology AM0036 (version 04.0.0), as documented in the PDD part B and annex 3, which are evaluated in detail under the validation protocol in Appendix A to this report based from the webhosted PDD.

3.4.2 Project Boundary:

As indicated in the methodology AM0036 version 04.0.0, for determining GHG emissions of the project activity the following emissions sources are included:

- CO₂ emissions from on-site fossil fuel and electricity consumption attributable to the project activity. This may include fossil fuels or electricity used for on-site transportation or preparation of the biomass residues, e.g. the operation of shredders or other processing equipment, but shall not include fossil fuels co-fired in the heat generation equipment. CO₂ emissions from off-site transportation of biomass residues that are combusted in the project activity.

Project emissions include CO₂ emissions from on-site fossil fuel and electricity consumption that is attributable to the project activity ($PE_{CO_2,FF,y}$ and $PE_{CO_2,EC,y}$), CO₂ emissions from off-site transportation of biomass residues that are combusted in the heat generation equipment to the project site ($PE_{CO_2,TR,y}$), and, if included in the project boundary, CH₄ emissions from combustion of biomass residues for heat generation ($PE_{CH_4,BF,y}$).

For the purpose of determining the baseline of the proposed project activity, project participants include the following emission sources:

- CO₂ emissions from fossil fuel fired for heat generation in the heat generation equipment that are displaced by heat generation with biomass residues.

The spatial extent of the project boundary encompasses:

- The lime kilns and related equipment to be used for the pre treatment of the agroforestry residues and for its feeding into the kilns:

- Discharge hopper system
- Reception hopper
- Cover and winch
- Conveyor belt
- Magnet
- Drying system
- Screw conveyor
- Refiner mill
- Blowers
- Pneumatic piping
- Cyclon
- Dust collector
- Silo
- Biomass injection system.
- Piping for biomass injection through spears;
- The vehicles used for transportation of biomass residues to the project site;

Where the most likely baseline scenario for the use of the biomass residues is that the biomass residues would be dumped or left to decay under aerobic or anaerobic conditions (cases B1 or B2) or would be burnt in an uncontrolled manner without utilizing it for energy purposes (case B3), project participants may decide whether to include CH₄ emissions from the treatment of biomass residues in the baseline and from combustion of biomass residues in the heat generation equipment in the project boundary. Project participants shall either include CH₄ emissions for both project and baseline emissions or exclude them in both cases, and document their choice in the CDM-PDD.

The geographical and physical project boundary of the project activity was determined by the validation team during the on-site assessment. The coordinates were correctly documented in the PDD. The sources and sinks of greenhouse gas identified in the PDD are deemed to be appropriate. The coordinates were confirmed by the validation team through public sources (google earth).

Emissions	GHGs involved	Description
Baseline emissions (Fossil fuel combustion for heat generation).	CO ₂	Important emission source.
Baseline emissions (Fossil fuel combustion for heat generation).	CH ₄	Excluded for simplification. This is conservative.
Baseline emissions (Fossil fuel combustion for heat generation).	N ₂ O	Excluded for simplification. This is conservative.
Baseline emissions (Uncontrolled burning or decay of the biomass residues).	CO ₂	It is assumed that CO ₂ emissions from surplus biomass residues do not lead to changes of carbon pools in the LULUCF sector
Baseline emissions (Uncontrolled burning or decay of the biomass residues).	CH ₄	Project participants decided to exclude this emission source as well as the CH ₄ emissions from combustion of biomass residues for heat generation in the project scenario for simplification in calculation.
Baseline emissions (Uncontrolled burning or decay of the biomass residues).	N ₂ O	Excluded for simplification. This is conservative.
Project emissions (On-site fossil fuel and electricity consumption).	CO ₂	Important emission source.
Project emissions (On-site fossil fuel and electricity consumption).	CH ₄	Excluded for simplification. This emission source is assumed to be very small.
Project emissions (On-site fossil fuel and electricity consumption).	N ₂ O	Excluded for simplification. This emission source is assumed to be very small.
Project emissions (Off-site transportation of biomass	CO ₂	Important emission source.

residues).		
Project emissions (Off-site transportation of biomass residues).	CH ₄	Excluded for simplification. This emission source is assumed to be very small.
Project emissions (Off-site transportation of biomass residues).	N ₂ O	Excluded for simplification. This emission source is assumed to be very small.
Project emissions (Combustion of biomass residues for heat generation).	CO ₂	It is assumed that CO ₂ emissions from surplus biomass residues do not lead to changes of carbon pools in the LULUCF sector.
Project emissions (Combustion of biomass residues for heat generation).	CH ₄	This emission source will be excluded as well as the CH ₄ emissions from uncontrolled burning or decay of the biomass residues in the baseline scenario for simplification in calculation.
Project emissions (Combustion of biomass residues for heat generation).	N ₂ O	Excluded for simplification. This emission source is assumed to be small.
Project emissions (Biomass storage).	CO ₂	It is assumed that CO ₂ emissions from surplus biomass residues do not lead to changes of carbon pools in the LULUCF sector.
Project emissions (Biomass storage).	CH ₄	Excluded for simplification. Since biomass residues are stored for not longer than one year, this emission source is assumed to be small.
Project emissions (Biomass storage).	N ₂ O	Excluded for simplification. This emissions source is assumed to be very small.

In summary, the project boundary was correctly identified in accordance with the methodology AM0036 (version 04.0.0). All greenhouse gas emissions occurring within the proposed project activity boundary as a result of the implementation of the proposed CDM project activity have been appropriately addressed in the PDD.

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.

3.4.3 Baseline Identification:

As per the applied methodology AM0036 (version 04.0.0) /10/, “Fuel switch from fossil fuels to biomass residues in heat generation equipment” the methodology contains a detailed procedure to correctly identify the baseline of the project activity, the methodology requires to use of the “Tool for the demonstration and assessment of additionality” version 7.0.0 /11/, “To establish the list of barriers that would prevent alternative scenarios for heat generation or for the use of biomass residues to occur in the absence of the project activity. The PDD describes each of the alternatives in section B4, and a brief explanation to adequately select the alternatives of the selected baseline scenario, also contains external sources to justify the inclusion or exclusion of each alternative as possible baseline scenario.

Realistic and credible alternatives have been determined separately, as per AM0036 version 04.0.0, for the identification of the most plausible baseline scenario, based on the following step-wise procedure:

Step 1: “Identification of alternative scenarios to the proposed CDM project activity that is consistent with current laws and regulations”:

The alternatives to be analyzed for heat generation include:

Alternative scenario	Determination by validation team
H1: The proposed project activity not undertaken as a CDM project activity (heat generation with biomass residues).	The validation team reviewed the PDD /2/ and the investment analysis in the financial model /21/ and it is confirmed the lack of financial attractiveness of the project (Refer to the assessment in section 3.5.3); therefore, the validation team confirms the scenario H1 is not feasible scenario in the host country.
H2: Continued operation of the existing heat generation equipment using the same fuel mix or less biomass residues as in the past.	The installation of the new kiln responds to a demand increase and in case that the project activity were not implemented the only possible scenario would be the continuation of fossil fuels utilization as it has been done with the other kilns in the plant and as described in alternative H5.
H3: Continued operation of the existing unit(s) using a different fuel (mix).	The validation team reviewed the National Energy Balance /67/ and the historical production and forecast consumption of fossil fuels of Calidra plant /39/, and it is concluded that Biomass is the most attractive fuel for the CaO plant. Due to switching from one fossil fuel to another would not lead to significant emission reductions.
H4: Improvement of the performance of the existing heat generation equipment.	The validation team reviewed that the current heat generation equipments have received proper maintenance and run according to supplier's specifications at its maximum efficiency /33/.
H5: Continued operation of the existing unit(s) using the same fuel mix or less biomass residues as in the past AND installation of new heat generation equipment that is/are fired with the same fuel type(s) and the same fuel mix (or a lower share of biomass) as the existing equipment.	This alternative describes properly the baseline scenario of this proposed project activity /2/.
H6: Replacement of the existing heat generation equipment with new heat generation equipment.	The replacement of the current equipments would imply a harder effort of what is demanded by the project activity, which only requires the retrofit of the current installed kilns instead of the replacement of the whole equipments.

The alternatives to be analyzed for the use of forestry residues include:

Alternative scenario	Determination by validation team
B1: The biomass residues are dumped or left to decay under mainly aerobic conditions. This applies, for example, to dumping and decay of biomass residues on fields.	These residues are either burnt in an uncontrolled manner or left to decay in aerobic conditions /2/.
B2: The biomass residues are dumped or left to decay under clearly anaerobic conditions. This applies, for example, to deep landfills with more than 5 meters. This does not apply to biomass residues that are stock-piled or left to decay on fields;	These residues are either burnt in an uncontrolled manner or left to decay in aerobic conditions /2/.
B3: The biomass residues are burnt in an uncontrolled manner without utilizing them for energy purposes;	These residues are either burnt in an uncontrolled manner or left to decay in aerobic conditions /2/.
B4: The biomass residues are sold to other consumers in the market and the predominant use of the biomass residues in the region/country is for energy purposes (heat and/or power generation);	There is no current use for these residues /39/.
B5: The biomass residues are used as feedstock in a	According to the National Association of Lime

process (e.g., in the pulp and paper industry);	Producers (ANFACAL) /42/ and /43/, officially recognized organism in Mexico, not even one plant has officially recognized the use of biomass residues as energy source and there are not official registers of the use of these residues as fuel for kilns in the production of lime or CaO.
B6: The biomass residues are used as fertilizer;	These residues are burnt in an uncontrolled manner. Also, it is not used as a fertilizer due to the extra machinery required /2/.
B7: The proposed project activity not undertaken as a CDM project activity (use of the biomass residues for heat generation);	The validation team reviewed the PDD /2/ and the investment analysis in the financial model /21/ and it is confirmed the lack of financial attractiveness of the project (Refer to the assessment in section 3.5.3); therefore, the validation team confirms the scenario B7 is not feasible scenario in the host country.
B8: Any other use of the biomass residues.	These residues are either burnt in an uncontrolled manner or left to decay in aerobic conditions /2/.

The alternatives to be analyzed for the use of agricultural residues include:

Alternative scenario	Determination by validation team
B1: The biomass residues are dumped or left to decay under mainly aerobic conditions. This applies, for example, to dumping and decay of biomass residues on fields.	These residues are either burnt in an uncontrolled manner or left to decay in aerobic conditions /2/.
B2: The biomass residues are dumped or left to decay under clearly anaerobic conditions. This applies, for example, to deep landfills with more than 5 meters. This does not apply to biomass residues that are stock-piled or left to decay on fields;	These residues are either burnt in an uncontrolled manner or left to decay in aerobic conditions /2/.
B3: The biomass residues are burnt in an uncontrolled manner without utilizing them for energy purposes;	These residues are either burnt in an uncontrolled manner or left to decay in aerobic conditions /2/.
B4: The biomass residues are sold to other consumers in the market and the predominant use of the biomass residues in the region/country is for energy purposes (heat and/or power generation);	There is no current use for these residues /39/.
B5: The biomass residues are used as feedstock in a process (e.g., in the pulp and paper industry);	According to the National Association of Lime Producers (ANFACAL) /42/ and /43/, officially recognized organism in Mexico, not even one plant has officially recognized the use of biomass residues as energy source and there are not official registers of the use of these residues as fuel for kilns in the production of lime or CaO.
B6: The biomass residues are used as fertilizer;	These residues are burnt in an uncontrolled manner. Also, it is not used as a fertilizer due to the extra machinery required /2/.
B7: The proposed project activity not undertaken as a CDM project activity (use of the biomass residues for heat generation);	The validation team reviewed the PDD /2/ and the investment analysis in the financial model /21/ and it is confirmed the lack of financial attractiveness of the project (Refer to the assessment in section 3.5.3); therefore, the validation team confirms the scenario B7 is not feasible scenario in the host country.
B8: Any other use of the biomass residues.	These residues are either burnt in an uncontrolled manner or left to decay in aerobic conditions /2/.

- As per observed during the site visit neither biomass nor biomass residues have been used in the existing heat generation equipment during the most recent three year period prior to the implementation of the project activity.
- The most plausible baseline scenario will be determined separately for each type of biomass residues (forestry residues and agricultural residues).

The remaining alternatives to the project activity alternatives H5 for heat generation and the alternatives B1 and B3 for the use of forestry and agroindustrial residues for heat generation, have not been discarded for heat generation comply with the national and local applicable legislation and regulations since they correspond to the practice conducted nowadays by Calidra de Occidente S. A. de C. V. and being the unique alternative remaining also corresponds to the baseline for the emission reductions calculation. The applicable regulations refer to the Climate change and Environmental Protection General Law (LGEEPA), specifically to the articles 109 BIS 1 and 111 BIS. All relevant policies / regulations were taken into account in the baseline identification, through the followings documents Unique Environmental Licence (Licencia Ambiental Unica, LAU) of Calidra de Occidente S. A. de C. V. issued on January 17th 2012 /51/ and NOM-085-SEMARNAT-1994 Mexican Official Norm, issued by (SEMARNAT, Ministry of Environment and Natural Resources) /52/.

Step 2: Barrier analysis to eliminate alternatives to the project activity that face prohibitive barriers

Barrier analysis is not part of demonstration of additionality, due to it is demonstrated as per investment analysis. Please refer to section 3.5.3 to further discussion.

All the alternative scenarios were discussed and no reasonable baseline scenarios have been excluded the validation the reviewed references and sources included in the PDD and found information adequate for the exclusion of the alternatives. The alternatives were addressed taking into account the legal framework of the host country, and found in compliance /51/. The validation team during the site visit was able to verify that the required conditions for the methodology AM0036 are fulfilled.

The validation team confirms that the proposed project activity meets the above requirement. Therefore, the baseline scenario as prescribed in the methodology AM0036 Emissions reduction through retrofit of existing heat generation equipment and/or installation a new heat generation equipment that fire(s) biomass residues and, where applicable fossil fuels, the methodology required to to use of the “Tool for the demonstration and assessment of additionality”, “Tool to determine the baseline efficiency of thermal or electric energy generation systems”, “Tool to determine the remaining lifetime of equipment”, , “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of a crediting period version”. is applicable to the proposed project activity. The validation took cognizance of § Section 7.12 of VVS (version 09.0).

<p>The approved baseline methodology applicable to the</p> <ul style="list-style-type: none"> - project explicit criteria - implicit criteria (e.g. available scenarios, applicability of formulas for BE/PE/LE calculations) 	<p> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No </p>	<p>The PP used the methodology AM0036: Emissions reduction through retrofit of existing heat generation equipment and/or installation of new heat generation equipment that fire(s) biomass residues and, where applicable fossil fuels, the methodology required to to use of the “Tool for the demonstration and assessment of additionality”, “Tool to determine the baseline efficiency of thermal or electric energy generation systems”, “Tool to determine the remaining lifetime of equipment”, , “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of a crediting period version”. Please refer to Table 1 in Section 3.4.1, for complete discussion on applicability criteria. The methodology is</p>
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		applicable to this project activity, because Calidra de Occidente plant is Calcium Oxide (CaO) industry where the use of renewable energies in the calcination stage of its process by using biomass residues energy instead of fossil fuels; as a result, there will be a greenhouse gases emission reduction from the combustion process.
PDD includes all assumptions and data used by project participants	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	In the discussion of each step in the PDD assumptions used by project participant are stated.
All the references and documents used are relevant for establishing the baseline scenario	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The PP used the methodology AM0036: Emissions reduction through retrofit of existing heat generation equipment and/or the replacement of existing heat generation equipment by new heat generation equipment that fire(s) biomass residues and, where applicable fossil fuels, the methodology required to to use of the “Tool for the demonstration and assessment of additionality”, “Tool to determine the baseline efficiency of thermal or electric energy generation systems”, “Tool to determine the remaining lifetime of equipment”, , “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of a crediting period version amd and other tools used to establish baseline scenario. The validation team verified that the use of the methodology and tools are consistent through PDD development /2/.
All the references and documents used are correctly quoted and conservatively interpreted in the PDD	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The review by the validation team showed that all references and documents used by the PP in the development of the baseline scenario are correctly quoted and conservatively interpreted.
All relevant policies / regulations considered are listed in the PDD	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All relevant policies / regulations were taken into account in the baseline identification, through the followings documents Unique Environmental Licence (Licencia Ambiental Unica, LAU) of Calidra de Occidente S. A. de C. V. issued on January 17th 2012 /51/ and NOM-085-SEMARNAT-1994 Mexican Official Norm, issued by (SEMARNAT, Ministry of Environment and Natural Resources) /52/.
Identified potential baseline scenarios reasonably represent what would/could occur in the absence of the proposed project activity	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All the scenarios represent what would/could occur in project absence.
The baseline scenario selection is appropriate and determined according to the methodology	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The baseline selection is appropriate because according to the methodology and after the required scenario analysis the most

		plausible baseline scenario is H5, while for the use of biomass residues the most plausible scenarios are B1 and B3.
The approved methodology used is applicable to the identified baseline scenario	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Please refer to Table 1 in Section 3.4.1, for complete discussion on applicability criteria. . The methodology is applicable to this project activity, because Calidra de Occidente plant is Calcium Oxide (CaO) industry where the use of renewable energies in the calcination stage of its process by using biomass residues energy instead of fossil fuels; as a result, there will be a greenhouse gases emission reduction from the combustion process.

The approved baseline methodology has been correctly applied to identify a realistic and credible baseline scenario, and the identified baseline scenario (that are scenarios H5, while for the use of biomass residues the most plausible scenarios are B1 and B3) most reasonably represents what would occur in the absence of the proposed CDM project activity.

All the assumption and data used by the project participants are listed in the PDD and/or supporting documents /30/, /31/, /32/, /34/, /35/, /36/, /37/, /39/, /40/. All documentation relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD. Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable. Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD.

3.4.4 GHG Emission Reductions:

The validation team determined that the equations and parameters found in the PDD have been correctly applied by direct comparison in the selected approved methodology.

The validation team verified the justification given in the PDD for the data selection and every parameter used in the equation development.

The validation team concludes that all data sources and assumptions are appropriate and calculations are correct and applicable to the proposed CDM project activity and will result in a conservative estimate of the emission reductions. This activity was done by a step by step review of the documents given by the Project Proponent /21/.

As per methodology AM0036 version 04.0.0, emission reductions are determined as follows:

Where

ER_y	=	Emission reductions in year y (tCO ₂)
BE_y	=	Baseline emissions in year y (tCO ₂)
PE_y	=	Project emissions in year y (tCO ₂)
LE_y	=	Leakage emissions in year y (tCO ₂)

Emission reductions calculations formula is corrected addressed in the last version of the PDD/2/.

As per selected methodology, Baseline emissions include CO₂ emissions from fossil fuel combustion in the heat generation equipment in the absence of the project activity and, if included in the project boundary, CH₄ emissions from the treatment of biomass residues in the absence of the project activity:

$$BE_y = BE_{HG,y} + BE_{BF,y}$$

Where:

- BE_y = Baseline emissions during the year y (tCO₂e/yr)
 $BE_{HG,y}$ = Baseline emissions from fossil fuel combustion for heat generation in the heat generation equipment in year y (tCO₂/yr)
 $BE_{BF,y}$ = Baseline emissions due to uncontrolled burning or decay of the biomass residues in year y (tCO₂e/yr)

No CH₄ emissions from the treatment of biomass residues in the absence of the project activity will be taken into account for the current project activity.

Thus, $BE_y = BE_{HG,y} 54,894 + BE_{BF,y} 0 = 54,894$ tCO₂

Formula Identification	Parameter	Value is: calculated (C), default (D), project specific (PS)	Justification of choice (N.A.= not applicable)																
Approved baseline and monitoring methodology AM0036 “Fuel switch from fossil fuels to biomass residues in heat generation equipment” version 04.0.0																			
BE _y = (7) PDD Eq. 1	BE _y Baseline emission from fossil fuels displaced by alternative fuels in year y (tCO ₂)	$(C) = BE_y = BE_{HG,y} + BE_{BF,y}$ <table><tr><th>Year</th><th>BE_{FF,y} (tCO₂)</th></tr><tr><td>1</td><td>54,894</td></tr><tr><td>2</td><td>54,894</td></tr><tr><td>3</td><td>54,894</td></tr><tr><td>4</td><td>54,894</td></tr><tr><td>5</td><td>54,894</td></tr><tr><td>6</td><td>54,894</td></tr><tr><td>7</td><td>54,894</td></tr></table>	Year	BE _{FF,y} (tCO ₂)	1	54,894	2	54,894	3	54,894	4	54,894	5	54,894	6	54,894	7	54,894	Calculated as per formula (1) of the methodology. Please refer to table below showing all the choices made in every step of the methodology /10/.
	Year	BE _{FF,y} (tCO ₂)																	
1	54,894																		
2	54,894																		
3	54,894																		
4	54,894																		
5	54,894																		
6	54,894																		
7	54,894																		
	BE _{HG,y} Baseline emissions from fossil fuel combustion for heat generation in the heat generation equipment in year y (tCO ₂ e/yr)	$(C) = BE_{HG,y} = \frac{HG_{PJ,biomass,y} \cdot EF_{FF,CO2,y}}{\eta_{heat,FF}}$ <table><tr><th>Year</th><th>BE_{HG,y} (tCO₂)</th></tr><tr><td>1</td><td>54,894</td></tr><tr><td>2</td><td>54,894</td></tr><tr><td>3</td><td>54,894</td></tr><tr><td>4</td><td>54,894</td></tr><tr><td>5</td><td>54,894</td></tr><tr><td>6</td><td>54,894</td></tr><tr><td>7</td><td>54,894</td></tr></table>	Year	BE _{HG,y} (tCO ₂)	1	54,894	2	54,894	3	54,894	4	54,894	5	54,894	6	54,894	7	54,894	Calculated as per formula (2) of the methodology.
Year	BE _{HG,y} (tCO ₂)																		
1	54,894																		
2	54,894																		
3	54,894																		
4	54,894																		
5	54,894																		
6	54,894																		
7	54,894																		
BE _{HG,y} =(7) PDD Eq. 2	HG _{PJ,biomass,y} Heat generated with incremental biomass residues used as a result of the project	$(C) = BE_{HG,y} = \frac{HG_{PJ,biomass,y} \cdot EF_{FF,CO2,y}}{\eta_{heat,FF}}$ <table><tr><th>Year</th><th>BE_{HG,y} (tCO₂)</th></tr><tr><td>1</td><td>54,894</td></tr><tr><td>2</td><td>54,894</td></tr><tr><td>3</td><td>54,894</td></tr><tr><td>4</td><td>54,894</td></tr></table>	Year	BE _{HG,y} (tCO ₂)	1	54,894	2	54,894	3	54,894	4	54,894	Calculated as per formula (2) of the methodology. Please refer to table below showing all the choices made in every step of the methodology /10/.						
Year	BE _{HG,y} (tCO ₂)																		
1	54,894																		
2	54,894																		
3	54,894																		
4	54,894																		
The determination of HG _{PJ,biomass,y} depends on whether																			

Formula Identification	Parameter	Value is: calculated (C), default (D), project specific (PS)		Justification of choice (N.A.= not applicable)
	activity during the year y (GJ/yr)	5	54,894	<p>only fossil fuels would be used for heat generation in the absence of the project activity (case A) or whether along with fossil fuels some biomass residues also would be used in the absence of the project activity (case B).</p> <p>The guidance under case A should be followed if:</p> <p>No biomass has been used for heat generation at the project site during the most recent three years prior to the implementation of the project activity; and</p> <p>The most plausible baseline scenario is that heat would continue to be generated only with fossil fuels.</p> <p>The guidance under case B should be followed if:</p> <p>Biomass residues have already been used in heat generation equipment for heat generation at the project site prior to the implementation of the project activity; and</p> <p>The most plausible baseline scenario is that heat would continue to be generated partly with fossil fuels and partly with biomass residues.</p> <p>For the proposed project activity the case A applies, as per observed during the site visit neither biomass nor biomass residues have been used in the existing heat generation equipment during the most recent three year period prior to the implementation of the project activity, as was correctly assessed through historical production and fossil fuel consumption /39/.</p>
		6	54,894	
		7	54,894	
	EF _{FF,CO₂,y} CO ₂ emission factor of the fossil fuel	(C) = EF _{FF,CO₂,y}		<p>Calculated as per formula (2) of the methodology.</p> <p>The lower values of the effective CO₂ emission factors</p>
		Year	EF _{FF,CO₂,y} (tCO ₂ e/GJ)	

Formula Identification	Parameter	Value is: calculated (C), default (D), project specific (PS)		Justification of choice (N.A.= not applicable)																
	type displaced by biomass residues for the year y (tCO ₂ e/GJ)	<table><tr><td>1</td><td>0.0726</td></tr><tr><td>2</td><td>0.0726</td></tr><tr><td>3</td><td>0.0726</td></tr><tr><td>4</td><td>0.0726</td></tr><tr><td>5</td><td>0.0726</td></tr><tr><td>6</td><td>0.0726</td></tr><tr><td>7</td><td>0.0726</td></tr></table>	1	0.0726	2	0.0726	3	0.0726	4	0.0726	5	0.0726	6	0.0726	7	0.0726		for combustion have been used as provided in table 1.4 of Chapter1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories. For the purpose of determining $EF_{FF,CO2,y}$, as a conservative approach, the least carbon intensive fuel type should be used among the fossil fuels types used at the project site during the most recent 3 years prior to the implementation of the project activity and the fossil fuels used in the equipment at the project site due the year y.		
	1	0.0726																		
2	0.0726																			
3	0.0726																			
4	0.0726																			
5	0.0726																			
6	0.0726																			
7	0.0726																			
	$\eta_{heat,FF}$ Average net efficiency of the heat generation equipment if fired with fossil fuels in the baseline (ratio)	(D) = $\eta_{heat,FF}$ <table><tr><td>Year</td><td>$BE_{HG,y}$ (tCO₂)</td></tr><tr><td>1</td><td>100%</td></tr><tr><td>2</td><td>100%</td></tr><tr><td>3</td><td>100%</td></tr><tr><td>4</td><td>100%</td></tr><tr><td>5</td><td>100%</td></tr><tr><td>6</td><td>100%</td></tr><tr><td>7</td><td>100%</td></tr></table>	Year	$BE_{HG,y}$ (tCO ₂)	1	100%	2	100%	3	100%	4	100%	5	100%	6	100%	7	100%		As per approved methodology /10/ 100% has been chosen by the PP as a conservative default value. The average net efficiency of the heat generation equipment if fired with fossil fuels in the baseline is determined using the “Tool to determine the baseline efficiency of thermal or electric energy generation systems” version 01.
Year	$BE_{HG,y}$ (tCO ₂)																			
1	100%																			
2	100%																			
3	100%																			
4	100%																			
5	100%																			
6	100%																			
7	100%																			
$HG_{PJ,biomass,total,y}=(7)$ PDD Eq. 3	$HG_{PJ,biomass,total,y}$ Total heat generated from firing biomass residues in all heat generation equipment at the project site during the year y (GJ/yr)	(C)= $HG_{PJ,biomass,total,y} = HG_{PJ,total,y} \cdot \frac{\sum_k BF_{k,y} \cdot NCV_k}{\sum_k BF_{k,y} \cdot NCV_k + \sum_i FC_{i,y} \cdot NCV_i}$ <table><tr><td>Year</td><td>$HG_{PJ,biomass,total,y}$ (GJ/yr)</td></tr><tr><td>1</td><td>756,127</td></tr><tr><td>2</td><td>756,127</td></tr><tr><td>3</td><td>756,127</td></tr><tr><td>4</td><td>756,127</td></tr><tr><td>5</td><td>756,127</td></tr><tr><td>6</td><td>756,127</td></tr><tr><td>7</td><td>756,127</td></tr></table>		Year	$HG_{PJ,biomass,total,y}$ (GJ/yr)	1	756,127	2	756,127	3	756,127	4	756,127	5	756,127	6	756,127	7	756,127	Calculated as per formula (3) of the methodology. $HG_{PJ,biomass,total,y}$ has been determined based on the fraction of biomass residues that are used for heat generation in the heat generation equipment, taking into account all biomass residue types k and fossil fuel types i fired in the project heat generation equipment during a year y. Calculation of $HG_{PJ,biomass,total,y}$ is based on the following data: $BF_{k,y}$ (Quantity of biomass residue type k fired) is based on the forecast of Forestry residues 3,368 tons + Agircultural residues 43,538 tons. NCV_k (Net calorific value of
Year	$HG_{PJ,biomass,total,y}$ (GJ/yr)																			
1	756,127																			
2	756,127																			
3	756,127																			
4	756,127																			
5	756,127																			
6	756,127																			
7	756,127																			

Formula Identification	Parameter	Value is: calculated (C), default (D), project specific (PS)	Justification of choice (N.A.= not applicable)																
			biomass residue type k) is based on default values by the IPCC /62/ Forestry residues: 4,471 Kcal/Kg and Agricultural residues: 3,805 Kcal/Kg PCC.																
BE _{BF,y} =(7) PDD Eq. 4	BE _{BF,y} Baseline emissions due to uncontrolled burning or decay of the biomass residues in year y (tCO ₂ e/yr)	(C)= <table><tr><th>Year</th><th>BE_{BF,y} (tCO₂)</th></tr><tr><td>1</td><td>0</td></tr><tr><td>2</td><td>0</td></tr><tr><td>3</td><td>0</td></tr><tr><td>4</td><td>0</td></tr><tr><td>5</td><td>0</td></tr><tr><td>6</td><td>0</td></tr><tr><td>7</td><td>0</td></tr></table>	Year	BE _{BF,y} (tCO ₂)	1	0	2	0	3	0	4	0	5	0	6	0	7	0	Calculated as per formula (9) of the methodology. In this case no biomass residues have been used whatsoever, then BF _{PJ,k,y} = BF _{k,y} , as per reviewed by the audit team through Historical production and fossil fuels consumption reports 2008, 2009, 2010, /39/. Even when for the proposedproject activity B1 scenario can be applied, the project participants have decided not to take into account CH ₄ emissions due to uncontrolled burning, then BE _{BF,y} = 0.
Year	BE _{BF,y} (tCO ₂)																		
1	0																		
2	0																		
3	0																		
4	0																		
5	0																		
6	0																		
7	0																		
Project emissions																			
PE _y =(7) PDD Eq. 5	PE _y Project emissions during the year y (tCO ₂ /yr)	(C)= PE _y = PE _{CO2,FF,y} + PE _{CO2,EC,y} + PE _{CO2,TR,y} + GWP _{CH4} + PE _{CH4,BF,y} <table><tr><th>Year</th><th>PE_y (tCO₂)</th></tr><tr><td>1</td><td>3,728</td></tr><tr><td>2</td><td>3,728</td></tr><tr><td>3</td><td>3,728</td></tr><tr><td>4</td><td>3,728</td></tr><tr><td>5</td><td>3,728</td></tr><tr><td>6</td><td>3,728</td></tr><tr><td>7</td><td>3,728</td></tr></table>	Year	PE _y (tCO ₂)	1	3,728	2	3,728	3	3,728	4	3,728	5	3,728	6	3,728	7	3,728	Calculated as per formula (10) of the methodology. Thus, PE _y = Emissions from on-site fossil fuel combustion (PE _{CO2,FF,y}) 58 + Emissions from on-site electricity consumption (PE _{CO2,EC,y}) 2,762 + Emissions from off-site transportation of biomass residues (PE _{CO2,TR,y}) 908 + Global Warming Potential of methane (GWP _{CH4}) 25 - CH4 emissions from combustion of biomass residues in the heat generation equipment (PE _{CH4,BF,y}) 0= Project Emissions (PE _y)3,728 tCO ₂ . Calculation based Historical production and fossil fuels consumption reports /39/. The CO ₂ emission factor for electricity used from the grid (EF _{grid,y}) shall be determined in accordance with the “Tool to calculate the emission factor for an electricity system” version 3.0.0 /13/.
Year	PE _y (tCO ₂)																		
1	3,728																		
2	3,728																		
3	3,728																		
4	3,728																		
5	3,728																		
6	3,728																		
7	3,728																		
Leakage																			

Formula Identification	Parameter	Value is: calculated (C), default (D), project specific (PS)	Justification of choice (N.A.= not applicable)																
$LE_y = (7)$ PDD Eq. 11	LE_y Leakage emissions in year y (tCO ₂ /yr)	<div> C)= $LE_y = EF_{CO_2,LE} \cdot \sum_k BF_{PJ,k,y} \cdot NCV_k$ <table> <tr> <th>Year</th> <th>LE_y (tCO₂)</th> </tr> <tr><td>1</td><td>0</td></tr> <tr><td>2</td><td>0</td></tr> <tr><td>3</td><td>0</td></tr> <tr><td>4</td><td>0</td></tr> <tr><td>5</td><td>0</td></tr> <tr><td>6</td><td>0</td></tr> <tr><td>7</td><td>0</td></tr> </table> </div>	Year	LE_y (tCO ₂)	1	0	2	0	3	0	4	0	5	0	6	0	7	0	As was correctly assessed in the section 3.4.3 of this FVR for the heat generation equipment the most plausible baseline scenario is H5, while for the use of forestry and agricultural residues the most plausible scenarios are B1 and B3 (further details in section B.4). Hence as per methodology Since no categories of forestry and agricultural residues for which B4, B5, B6, B7 or B8, have been identified as the baseline scenario for the proposed project activity, k and therefore EF _{CO2,LE} are equal to zero and no leakage can be accounted in the emissions reduction calculation.
Year	LE_y (tCO ₂)																		
1	0																		
2	0																		
3	0																		
4	0																		
5	0																		
6	0																		
7	0																		

The following choices made in the application of the “Tool to calculate the emission factor for an electricity system” (Version 05.0.0), EB 63 annex 19 /13/ have been assessed by the Validation Team:

$EF_{grid,CM,y}$ (CO₂e Emission factor from the Mexican grid)

Step	Choice adopted in PDD	Validation Comments
Step 1: Identify the relevant electricity systems	There are three grids in Mexico: a) The interconnected national system (SIN). b) The Baja California State grid. c) The Baja California Sur State grid. The relevant system was identified to be the SIN because the Zacatecas State is connected to the SIN.	All the three grids that exist in Mexico are identified in the Electrical sector outlook reports published by SENER /66/, thus the identification of the relevant electricity system is considered to be valid.
Step 2: Choose whether to include off-grid power plants in the project electricity system	Option 1 Only grid power plants are included in the calculation	The tool does not request a justification for choosing to include or not off-grid power plants, thus the selection is considered to be valid.
Step 3: Select a method to determine the operating margin (OM)	(a) Simple OM was selected. Ex-ante option was selected.	The OM method was selected because low-cost/must-run resources constitute less than 50% of the SIN, thus the selection is considered to be valid. Ex-ante option was selected for simplicity and because of the time delay for the publication of the Electrical sector outlook reports, thus the selection is considered to be valid.
Step 4: Calculate the operating margin emission factor according	(a) Simple OM was selected. Option B (total net electricity)	The selection of this choice is a consequence of the method

to the selected method.	generation of all power plants serving the system all fuel types and consumptions of the project electricity system) was selected.	selected to determine the operating margin in step 3 (all the choices of step 4 are identical to the choices of step 3), thus the selection is considered to be valid.
Step 5: Calculate the build margin (BM) emission factor	Option 1 (calculate for the first crediting period the BM emission factor ex-ante based on the most recent information available on units already built for sample group m at the time of CDM PDD submission to the DOE for validation) was selected. The sample group was calculated by means of steps (a), (b) and (c).	The selection of Option 1 is a consequence of the selection of the ex-ante choice of step 3, thus the selection is considered to be valid. Project participant identified the set of five power plants ($SET_{5-units}$) that started to supply electricity to the grid most recently and the set of power units that started to supply electricity to the grid most recently and comprise 20% of the annual electricity generation of the project electricity system ($SET_{\geq 20\%}$). In both cases CDM project activities were excluded. It was found that $SET_{\geq 20\%}$ has a larger production than $SET_{5-units}$, thus $SET_{sample} = SET_{\geq 20\%}$ and according to the methodology requirement, none of the plants that belongs to SET_{sample} started to supply electricity to the grid more than 10 years ago. Therefore steps (a), (b) and (c) are considered to be valid. Hence the final BM factor is 0.362 tCO ₂ /MWh
Step 6: Calculate the combined margin emission factor	Option (a), weighted average CM, was selected considering an ex-ante calculation.	As per the tool specifies that for wind and solar projects the default weights are 0.75 for wOM and 0.25 for wBM, and for all other projects the correspondent values are 0.5 for wOM and wBM. Then latest values are used for the Combine Margin emission factor $w_{OM} = 0.5$ and $w_{BM} = 0.5$.

In summary:

The EF calculated was 0.513 tCO₂/MWh obtained from the data publicly available at the moment of commencement of validation; thus the applied value is the most conservative one. See details below:

- To calculate Simple Operating Margin emission factor from the Mexican grid, information from years 2007, 2008, 2009 was used. In Mexico, data from previous years is published the first semester of the following year. In the specific case of this project, information from 2009 was published at the end of 2010. At the moment of the elaboration of this report, most updated information available is from 2010. Please take into account that the data from years 2007 - 2009 was available at the moment publication of the PDD (17/03/2012), thus OM calculation is based on the most recent data available at the time of submission of the CDM-PDD to the DOE, as per indicated in the used tool regarding the data vintage chosen: ex-ante fixed value during the crediting period. $EF_{grid,OM,y} = 0.662$ tCO₂e/MWh
- To calculate Built Margin emission factor from the Mexican grid, the set of power capacity additions in the electricity system that comprise 20% of the system generation and have built most recently is taken. The value of BM is calculated ex-ante for the first crediting period based on the most recent information

available on units already built at the time CDM-PDD submission to the DOE. $EF_{grid,BM,y} = 0.362$ tCO₂e/MWh

- To calculate the Combined Margin emission factor from the Mexican grid, a weighted average default value of 50% was taken for both, operating margin and built margin as required by the tool for this type of projects. This way $EF_{grid,CM,y} = 0.513$ tCO₂e/MWh.

Therefore, the validation team considers that the “Tool to calculate the emission factor for an electricity system” has been correctly applied.

In summary, the calculation of emission reductions was correctly demonstrated by the PP according to the methodology AM0036 version 04.0.0 and tools. The table below summaries validation team’s determination of emission reduction:

All assumptions made for estimating GHG are listed in the PDD	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	PDD/2/ contains the same information used in the calculation spreadsheets
All data used by project participants are listed in the PDD	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	PDD contains the same information used in the calculation spreadsheets
Their references and sources are also listed in the PDD	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	PDD contains sources and references used in the calculation spreadsheets. /1/, /2/, /21/
Formulas, parameters, values are complete, accurate, transparent and conservative	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Formulas are complete and values are conservative. Further discussion in the adequacy of the calculation model can be found in section 3.6.1 of this report
All the references and documents used are correctly quoted and conservatively interpreted in the PDD	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	References about the calculation of the emission reductions, grid emission factor, trash mix and composition, among other references, were cross-checked by the validation team, examples of that are emission reductions, grid emission factor, trash mix and composition /21/ /66/.
Methodology has been applied correctly to calculate project emissions, baseline emissions, leakage emissions and emission reductions	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Based in the formal review and after cross check the references and data spreadsheets the validation team considers that the methodology as been applied correctly.
All the emissions of baseline emissions can be replicated using information provided in the PDD	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Based on the validation team evaluation of the information that replication is possible. Taking values and equations obtaining similar results.

Based on the calculations and results presented in the sections above the implementation of the project activity will result in an average ex-ante estimation of emission reduction conservatively calculated to be 51,166tCO₂e per year for the selected crediting period.

All assumptions and data used by the project participants are listed in the PDD and/or supporting documents, including their references and sources. All documentation used by the project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD. All values used in the PDD are considered reasonable and conservative in the context of the proposed CDM project activity. The baseline methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions. All estimates of the baseline, project and leakage emissions can be replicated using the data and parameter values provided in the PDD.

3.5 Additionality :

The project applies the “Tool for demonstration and assessment of additionality” /11/ version version 07.0.0 to demonstrate additionality following the step-wise procedure included in the tool and assessed in the table showed below:

Step	Adopted in the PDD	Validation Comments
Step 1. Identification of	According to the “Tool for	The alternative considered in the

<p>alternatives to the project activity consistent with mandatory laws and regulations.</p>	<p>demonstration and assessment of additionalty" version 07.0.0 project activities in the context of approved methodology AM0036 only need to identify that there is at least on credible and feasible alternative that would be more attractive than the proposed project activity.</p> <ul style="list-style-type: none"> • Heat generation in the absence of the project activity; • What would happen to the biomass residues in the absence of the project activity. <p>Sub-step 1a. Project participant identified this alternative to identify technological barriers that would prevent the implementation of the proposed CDM project activity.</p> <p>Sub-step 1b. Project participant considered the The applicable regulations refer to the Climate change and Environmental Protection General Law (LGEEPA), specifically to the articles 109 BIS 1 and 111 BIS from the Ministry (SEMARNAT).</p>	<p>PDD is considered to be realistic and credible and fulfils the tool requirements for sub-step 1a. . It is considered that the assessment fulfils the tools requirements for sub-step 1b.</p>
<p>Step 2. Investment analysis.</p>	<p>Project participant decided to carry out the investment analysis for the project activity.</p> <p>Sub-step 2a. Benchmark analysis was selected by project participant.</p> <p>Sub-step 2b. Apply benchmark analysis (option III). This option is a consequence of the option selected in sub-step 2a.</p> <p>Sub-step 2c. Calculation and comparison of financial indicators.</p> <p>Sub-step 2d. Sensitivity analysis.</p>	<p>The Investment Analysis has been assessed for compliance with the "Guidelines on the Assessment of Investment Analysis", version 5.0.</p> <p>Sub-step 2b is tied to the selection made in Sub-step 2a, according to the "Guidelines on the assessment of investment analysis" (version 05), in cases of projects which could be developed by an entity other than the project participants, the benchmark should be based on parameters that are standard in the market. For these cases, the cost of equity should be determined either by:</p> <p>(a) Selecting the values provided in Appendix A of these guidelines; or by</p> <p>(b) Calculating the cost of equity</p>

		<p>using best financial practices, based on data sources that can be clearly validated by the DOE, while properly justifying all underlying factors.</p> <p>In this project option (a) has been chosen, thus it is considered that Sub-step 2b is correctly fulfilled.</p> <p>Sub-step 2b is tied to the selection made in Sub-step 2a, thus it is considered that Sub-step 2b is correctly fulfilled.</p> <p>Sub-step 2c is tied to the selection made in Sub-step 2a, thus it is considered that Sub-step 2c is correctly fulfilled.</p> <p>Sub-step 2d is tied to the selection made in Sub-step 2a, thus it is considered that Sub-step 2d is correctly fulfilled.</p>
Step 3. Barrier Analysis.	According to the tool Step 2 (Investment analysis) and Step 3 (Barrier analysis) have been applied by the PPs for the additionality demonstration /2/.	Barrier analysis has started in the sub-step 2.b. In accordance with the Economic model, it was observed that the incentives of the CDM are required to overcome the financial hurdles faced by the project activity Guidelines on the assessment of investment analysis /65/.
Step 4. Common practice analysis.	<p>Since project activity is not the first of its kind then project participant carried out the common practice analysis.</p> <p>Sub-step 4a. Analyze other activities similar to the proposed project activity.</p> <p>Sub-step 4b. Discuss any similar options that are occurring.</p>	<p>Common practice is analyzed in section 3.5.5, demonstrating that the proposed activity is not a common practice.</p> <p>Project participant carried out the step-wise procedure to determine if there are other activities similar to the proposed project activity and it was concluded that project activity is not a common practice in Mexico since only one activity is similar to the project activity. It is considered that Sub-step 4a is correctly fulfilled.</p> <p>Similar options were discussed by project participant and specific characteristics were discussed and analyzed and compared with project activity. It is considered that Sub-step 4b is correctly fulfilled</p>

3.5.1 CDM consideration:

The starting date of a CDM project activity is the earliest of the date(s) on which the implementation or construction or real action of a project activity begins/has begun. As per definition of the Glossary of CDM terms "In the context of a CDM project activity or CPA, the earliest date at which either the implementation or construction or real action of a CDM project activity or CPA begins." Based on this the first event that comprehends real action is the signature of the contract for the construction of the foundations required for the installation of Maerz kiln 2. Contract celebrated on one hand by Calidra de Occidente, S.A. de C.V. represented by José Antonio Hernández Liñán as legal representative, which will be denominated "owner of the construction" for contract purposed; and on the other hand Grupo Firmek, S.A. de C.V., represented by Edna Nayeli Senties Meinecke as legal representative, hereinafter "entrepreneur", under the following declarations and clauses.

The starting date of the project activity is considered to be on /18/03/2011 /2/ which is the date of signature of the contract for the foundation's construction for the 600 tpd kiln corresponds to the first real action for the project activity, then this date has been defined as the starting date of the project. This consideration is in accordance with the definition of the Glossary of CDM terms, therefore the project activity start date is considered to be valid.

Since project activity has starting date after 02/08/2008, then section II of the Guidelines on the demonstration and assessment of prior consideration of the CDM is applicable. This section of the mentioned Guideline requires that project participant must inform a Host Party designated national authority (DNA) and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status.

The validation team reviewed the following documentation to assess the CDM prior consideration

New kiln related activities:

Timeline	Milestone	Determination by the validation team
20/10/2010	Turnkey project quotation (management decision date evidence).	Project participant has provided the evidence that supports the mentioned milestone /69/.
18/03/2011	Signature of the contract for the foundation's construction for the 600 tpd kiln. Starting date of the project activity /80/.	Project participant has provided the evidence that supports the mentioned milestone /80/.
27/07/2011	The Prior CDM consideration form was sent to the UNFCCC secretariat.	Project participant has provided the evidence that supports the mentioned milestone /22/.
27/07/2011	The Prior CDM Consideration Form was sent to the Mexican DNA (SEMARNAT, Ministry of Environment and Natural Resources).	Project participant has provided the evidence that supports the mentioned milestone /22/.
27/07/2011	Mexican DNA confirmation of reception of the Prior CDM Consideration Form.	Project participant has provided the evidence that supports the mentioned milestone /24/.
17/08/2011	UNFCCC Secretariat confirmation of the reception of the Prior CDM Consideration Form.	Project participant has provided the evidence that supports the mentioned milestone /23/.
20/09/2011	Biomass residues availability studies are carried out and the corresponding report is obtained.	Project participant has provided the evidence that supports the mentioned milestone /68/.
04/11/2011	Feasibility study report.	Project participant has provided the evidence that supports the mentioned milestone /20/.
30/04/2012	Date of issuance of the Letter of Approval by the host country.	Project participant has provided the evidence that supports the mentioned milestone /3/.
April 2012	Commissioning date of the kiln.	Letter from the supplier (Maerz) dated on 15/04/2013 /31/.

Retrofit activities:

Timeline	Milestone	Determination by the validation team
20/10/2010	Turnkey project quotation (management decision date evidence).	Project participant has provided the evidence that supports the mentioned milestone /69/.
27/07/2011	The Prior CDM consideration form was sent to the UNFCCC secretariat.	Project participant has provided the evidence that supports the mentioned milestone /22/.
27/07/2011	The Prior CDM Consideration Form was sent to the Mexican DNA (SEMARNAT, Ministry of Environment and Natural Resources).	Project participant has provided the evidence that supports the mentioned milestone /22/.
27/07/2011	Mexican DNA confirmation of reception of the Prior CDM Consideration Form.	Project participant has provided the evidence that supports the mentioned milestone /24/.
17/08/2011	UNFCCC Secretariat confirmation of the reception of the Prior CDM Consideration Form.	Project participant has provided the evidence that supports the mentioned milestone /23/.
20/09/2011	Biomass residues availability studies are carried out and the corresponding report is obtained.	Project participant has provided the evidence that supports the mentioned milestone /68/.
04/11/2011	Feasibility study report.	Project participant has provided the evidence that supports the mentioned milestone /20/.
30/04/2012	Date of issuance of the Letter of Approval by the host country.	Project participant has provided the evidence that supports the mentioned milestone /3/.
Pending	Purchase and installation of the burner (for the 400 tpd kiln) and the required transport system for the feeding of biomass residues.	Pending

The first installed Maerz kiln started operations on December of 2009 and is not capable of using biomass residues without the installation of the proper burner and the required transport system for the feeding of biomass residues. On the other hand, the second kiln (new 600 tpd) has started on April 2012 and has been bought fully equipped to be able to consume biomass residues; nevertheless, it also requires the biomass pre-treatment equipment and the transport system included as part of this project activity. In absence of the project activity no biomass residue would be able to be consumed since no equipment for its pre-treatment, transport and feeding to the kilns could be installed, being why the same fuels would be used in the plant, more likely in the same proportion.

It is TÜV Rheinland validation team opinion that the proposed CDM project activity complies with the requirements of the guidance on prior consideration of CDM (VVS section 7.12.9).

Starting date of project	Justification of and evidences (references) on the starting date of project	Date of CDM consideration
18/03/2011	Signature of the contract for the foundation's construction for the 600 tpd kiln /80/	27/07/2011

In conclusion, the starting dates of the project activity were later to 02/08/2008 but before the date of publication of the PDD for global stakeholder process on 17/03/2012. Thus, the validation team took cognizance of § 107 Section 7.12.9 of VVS (version 09.0). The notification communication from the PP to the DNA and UNFCCC regarding the project activity has been evidenced /23/ and /24/.

3.5.2 Alternatives:

The PDD clearly analyses the alternatives to the baseline scenario. The alternatives are in line with the requirements Approved baseline and monitoring methodology AM0036 version 04.0.0 /10/. The PP evaluated and supported the selection of the alternatives, and selected the only five real and plausible scenarios to the project. (Reviewed in section 3.4.3)

For heat generation:

H5: Continued operation of the existing unit(s) using the same fuel mix or less biomass residues as in the past AND installation of new heat generation equipment that is/are fired with the same fuel type(s) and the same fuel mix (or a lower share of biomass) as the existing equipment.

For the use of biomass residues:

B1: The biomass residues are dumped or left to decay under mainly aerobic conditions. This applies, for example, to dumping and decay of biomass residues on fields.

B3: The biomass residues are burnt in an uncontrolled manner without utilizing them for energy purposes;

The alternative H5 for heat generation and the alternatives B1 and B3 for the use of forestry and agroindustrial residues for heat generation do not require any extra investment, no retrofit would be performed, the same historical fuel mix would be used and no emission reductions would be produced whatsoever, being then the baseline of the project activity.

TÜV Rheinland validation team considers the selected baseline is credible and complete.

3.5.3 Investment analysis:

The Investment Analysis has been assessed for compliance with the latest version (05) of the “Guidance on the Assessment of Investment Analysis”.

The latest version of the Economic model spreadsheet /21/ has been reviewed and includes all the parameters that are critical to the financial calculations according to the latest guidelines, the underlying assumptions are appropriate and the financial calculations are correct.

The following parameters have been supported with additional information:

- **Investment.** See Document Investmen evidence “Turnkey project quotation”, dated on 20/10/2010, issued by Asistencia Industrial de la Laguna /69/ for a complete description of the project’s equipment, construction and other investments.
- **Operation and Maintenance Costs:** see Document P115_VAL_241_cotizacion alternative fuels.pdf for a complete description of operating and maintenance costs.
- **Exchange rate:** See document Average 2010 MXN to USD exchange rate from x-change rates /64/. web page: <http://www.x-rates.com/>
- **Depreciation.** See Document Official Journal of the Federation /41/, it is the local law that stipulates depreciation rates of all identifiable assets.
- **Equity IRR.** See for information on the Appendix of Guidelines on the Assessment of Investment Analysis Version 05 /65/, for manufacturing industries
- **Transpor costs.** Transport costs 7.97 USD/ton of biomass residue
- **Interest:** See document Interest rate from the Bank of Mexico (Banco de México, Banxico) /55/.
- **Amortization:** This based on the project duration of the project lifetime 20 years and the portion of the total investment.

3.5.3.1 Choice of approach:

As per “Tool for the demonstration and assessment of additionality” version 07, the choice for benchmark analysis (Option III) has been chosen and correctly assssed based on the following:

- The Project activity does not generate additional incomes or economic benefits other than CDM related income, but savings due to the implementation of the project activity. Hence Option I (simple cost analysis) has been discarded.
- Cost of Equity is an appropriate internal company benchmark since there is only one possible project developer for the project activity. The Cost of Equity is determined by selecting the value 12.2% as a default value for the expected return on equity after taxes for Mexico, provided in The “Guidelines on the assessment of investment analysis” version 05 /78/ Appendix A, Group 2 for Mexico.
- 50% debt and 50% credit is used in the investment analysis.

Benchmark selection:

• Cost of Equity is an appropriate internal company benchmark due to the project will obtain income from two sources: prize os CERs and savings from buying fuel, hence, as per “Tool todemonstration and assessment of additionality” /11/ as the project generates other benefits than CDM income, only option II (comparison analysis) or option III (Benchmark analysis) shall be applied.

Futhermore, baseline scenario does not leaves the project participant no other choice than to make an investment to supply the same (or substitute) productos or services, the benchmark is the appropriate investment comparison analysis . The Cost of Equity is determined by selecting the value 12.2% as a default value for the expected return on equity after taxes for Mexico, provided in The “Guidelines on the assessment of investment analysis” version 05 /78/ Appendix A, Group 2 for Mexico.

• Equity IRR calculations in Investment analysis spreadsheet are After-Tax.

Parameter:	Cost of Equity IRR
Value applied for the IRR calculation:	12.2%
Source of the value:	Appendix on UNFCCC Guidelines
Consistency of the value:	Should be applied when project activity can only be undertaken by the project developer. Calculations of Cost of Equity are verifiable based on parameters that are standard in the market.
Validity of input value at the time of investment decision making:	Guidelines on the assessment of investment analysis, version 05 is the latest version of the investment analysis guidelines provided by the UNFCCC. Value if equity IRR 12.2% is valid at the moment of the decision to go-ahead with the project implementation; this is on 20/10/2010
Justification by the validation team according to §120, 121 of VVS version (06.0) (cross checking and comparison as applicable)	12.2% was verified by consulting the Guidelines on the assessment of investment analysis, version 05 /65/.

Input parameters

Parameter:	Investment
Value applied for the IRR calculation:	USD \$ 6,852,921.45 total investment.
Source of the value:	Document P115_VAL_364 and P115_VAL_381_project quotation.pdf describes project investment /69/. 50% debt and 50% credit is used in the investment analysis.
Consistency of the value:	Value of \$6,852,921.45 is consistent with Investment amount used in investment analysis spreadsheet calculations, see document P115_VAL_394_financial model.xls /21/.
Validity of input value at the time of investment decision making:	Investment values are valid at the moment of the decision to go-ahead with the project implementation; this is 20/10/2010
Justification by the validation team according to §120, 121 of VVS version (03.0) (cross checking and comparison as applicable)	Investment calculations on Investment Analysis spreadsheet were cross-checked with document quotation P115_VAL_364 and P115_VAL_394_, /20/71/. Due to the nature of the project activity, it was not possible to verify costs with other projects in the region.

Parameter:	Depreciation
Value applied for the IRR calculation:	5% for construction materials, 25% for equipment, and 10% for preoperative costs and other assets.
Source of the value:	Document P115_VAL_394.pdf, is the Ley de Impuesto Sobre la Renta /41/, in the latest update of 27 December 2006 and is used by project participant in the investment analysis spreadsheet.
Consistency of the value:	Depreciation values are consistently used in the investment analysis spreadsheet, and applied correctly for each type of asset: <ul style="list-style-type: none"> - 5% for construction materials - 25% for equipment - 10% for preoperative costs and other assets
Validity of input value at the time of investment decision making:	Document P115_VAL_394.pdf is Ley de Impuesto sobre la Renta /41/, Article 39, in the latest update of 27 December 2006. Values are valid at the moment of the decision to go-ahead with the project implementation; this is on 20/10/2010.
Justification by the validation team according to §120, 121 of VVS version (06.0) (cross checking and comparison as applicable)	Document P115_VAL_394.pdf is Ley de Impuesto sobre la Renta /41/, Article 39, the official reference for the calculation depreciation in Mexico. Depreciation calculations on Investment Analysis spreadsheet were cross-checked with document P115_VAL_394.pdf.

Parameter:	Project Activity Costs
Value applied for the IRR calculation:	USD \$ 897,374.79
Source of the value:	The following documents are used as supporting documentation by the project participant in the Economic model spreadsheet /21/. Document P115_VAL_181_ Electric Energy bill (from October

	<p>of 2009 to September of 2010), provided by CFE Federal Electricity Commission /53/.</p> <p>Dcoument P115_VAL_364_ Investment evidence “Turnkey project quotation”, dated on 20/10/2010 /69/.</p> <p>Document_ P115_VAL_249_ Operational days for the kilns Calidra de Occidente S.A de C.V, dated on 05/09/2010/59/.</p>
Consistency of the value:	Project activity costs are consistently used in the investment analysis spreadsheet.
Validity of input value at the time of investment decision making:	Values for Project activity costs are valid at the moment of the decision to go-ahead with the project implementation; this is on 20/10/2010.
Justification by the validation team according to §120, 121 of VVS version (06.0) (cross checking and comparison as applicable)	<p>Project activity cost calculations on Investment Analysis spreadsheet were cross-checked with information provided in documents P115_VAL_241.pdf /70/ and P115_VAL_364 /69/.</p> <p>Due to the nature of the project activity, it was not possible to verify costs with other projects in the region.</p>

Parameter:	Fossil Fuel Prices
Value applied for the IRR calculation:	<p>Petcoke USD \$ 102.75 per ton /36/</p> <p>Fuel oil USD \$361.10 per ton /37/</p> <p>Diesel USD \$825.72 per ton /39/</p> <p>Forestry residues USD 43.84 /70/</p> <p>Agricultural residues USD 43.84 /70/</p>
Source of the value:	<p>The following documents are used as supporting documentation by the project participant in the investment analysis spreadsheet.</p> <p>Petcoke´s invoice provided by (Garcia-Munte Energía of Mexico), dated on 22/09/2010. Invoice number 7644. /36/</p> <p>Fuel oil invoice provided by Baeza, S.A of C.V., dated on 09/06/2009. Invoice number 90476/37/</p> <p>Diesel USD Newspaper, “El Universal” that provides the price of Diesel it is dated on 08/10/2010 /39/</p> <p>Forestry residues USD and Agricultural residues provided by PREAGRO-supplier of biomass and forestry residues, “quotation of forestry residues” dated on 01/10/2010 /70/</p>
Consistency of the value:	Fossil fuel prices are consistently used in the investment analysis spreadsheet.
Validity of input value at the time of investment decision making:	<p>Prices for Pet coke and and Fuel oil and forestry residues and agriculture are valid at the moment of the decision to go-ahead with the project implementation; this is on 20/10/2010.</p> <p>Petcoke´s invoice provided by (Garcia-Munte Energía of Mexico), dated on 22/09/2010. Invoice number 7644. /36/</p> <p>Fuel oil invoice provided by Baeza, S.A of C.V., dated on 09/06/2009. Invoice number 90476/37/</p> <p>Diesel USD Newspaper, “El Universal” that provides the price of Diesel it is dated on 08/10/2010 /39/</p> <p>Forestry residues USD and Agricultural residues provided by PREAGRO-supplier of biomass and forestry residues, “quotation of forestry residues” dated on 01/10/2010 /70/</p>

Justification by the validation team according to §120, 121 of VVS version (06.0) (cross checking and comparison as applicable)	Information included in the Excel file was cross checked against the one provided by PP, due to the nature of the project activity, there is not any other similar project in the region.

Financial calculation and conclusion:

The financial analysis is in accordance with the “Tool for demonstration and assessment of additionality” version 06” and the “Guidelines on the assessment of investment analysis” version 05. All input parameters used in the IRR calculation were valid at the time of investment decision making. The validation team confirms that the Equity IRR post tax without any CDM revenue works out to be negligible, while with CDM revenue works out to be 3.27%. It is clearly demonstrated that the proposed project activity without CER revenues is financially unattractive. The validation took cognizance of § 119 of VVS (version 09.0).

3.5.3.2 Sensitivity analysis:

As per PDD, the variables subject to the sensitivity analysis are:

- Investment
- Fossil Fuels Price.
- Biomass Price
- Project Activity Costs

According to the “Guidelines on the assessment of investment analysis”, version 05, only variables that constitute more than 20% of either total project costs or total project revenues were subjected to a sensitivity analysis and are presented in the PDD, the values are reproducible in the associated spreadsheets. The validation team thus confirms that the following parameters meet the requirement and these parameters have been subjected to variations in the range of +20% and -20% in the PDD.

Besides of this, the valuation team has analyzed the fact that the date of the Management Decision was on 20/10/2010, while expected date of purchase and installation of the burner (for the 400 tpd kiln) and the required transport system for the feeding of biomass residues is pending. Given local and global stability in terms of inflation, prices and demand for materials over the last 12 months, as well as the expected stability in the short term, no further considerations are necessary with regards to the Investment analysis spreadsheet.

Input Values	+20%	-10%	+10%	-20%
Investment	N/A	N/A	N/A	N/A
Fossil Fuels Price	N/A	N/A	N/A	N/A
Biomass Price	N/A	N/A	N/A	N/A
Project Activity Costs	N/A	N/A	N/A	N/A

The validation took cognizance of § 120 (e) of VVS (version 09.0). The table below summaries the situation where the IRR would reach the benchmark:

Input value	Variation	Validation team's opinion
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Input value	Variation	Validation team's opinion
Investment	This project requires considerable investment in order to generate savings from fuel switch. Investment must be reduced by 219.87% in order to reach benchmark IRR of 12.20%.	Ceteris paribus, a reduction of 219.87% in investment is not possible. The alternative scenario to this project is no fuel switch, therefore no Investment accrued.
Project Activity Cost	If project activity costs are reduced by 130.98% the IRR reaches the benchmark of 12.20%.	Ceteris paribus, a reduction in Project Activity Costs of 130.98% is not possible. The alternative scenario to this project is no fuel switch, therefore no Project Activity Costs accrued.
Fossil fuels price	If the Fossil fuels price increases by 48.95%, the IRR reaches the benchmark.	Ceteris paribus, an increase of 48.95% is probable – although highly unlikely – due to this increase would also impact in the price of forestry and agricultural residues and other costs of the project as freight service from supplier's site to the plant. Pet coke is correctly used as the only fossil fuel in the break-even analysis since it represents 95% of total fossil fuel consumption.
Forestry and agricultural residues	If the prices for Forestry and agricultural residues decrease by 60.94%, the IRR crosses the benchmark.	Ceteris paribus, a decrease of 60.94% in Forestry and agricultural residue is probable – although highly unlikely – because the project is taking into consideration an assortment of alternative fuels, with different pricing and demand profiles, and can have the flexibility to change biomass fuel composition to reduce costs in case of a price increase.

The validation team thus confirms that the sensitivity analysis is in accordance with the “Tool for demonstration and assessment of additionality” version 06” and “Guidelines on the assessment of investment analysis” version 05. All input parameters used for sensitive analysis constitute more than 20% of either total project costs or total project revenues. The justifications provided by the PP with the variations of these parameters are been analyzed, clarified and accepted by the DOE.

3.5.4 Barrier analysis

Barrier analysis is not used as part of demonstration of additionality, instead of it, a financial analysis is used.

3.5.5 Common practice analysis

The Project Proponent describes in the PDD /2/ the following common practice analysis and it was confirmed through the Guideline on common practice V.2.0 was applied <
http://cdm.unfccc.int/Reference/Guidclarif/meth/meth_guid44.pdf>.

No.	Criteria selected	Determination by the validation team	Criteria justified
STEP 1: Applicable capacity or output range			
1	Calculate the applicable capacity/output, +/- 50% of total design	The installed capacity of Calidra de Occidente S. A. de C. V. CaO plant is 1,180 tpd, which means that the applicable output range for this analysis goes from 590 tpd to 1,770 tpd.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

No.	Criteria selected	Determination by the validation team	Criteria justified
	capacity/output of the proposed project activity		
STEP 2: Identify similar projects			
1	<ul style="list-style-type: none"> (a) The projects are located in the applicable geographical area (b) The projects apply the same measure as the proposed project activity; (c) The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity; (d) The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g. clinker) as the proposed project plant; (e) The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1; (f) The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed projectActivity. 	<ul style="list-style-type: none"> a) Mexico is the host country where project activity is located and validation team confirms that it is valid to take into account the host country as geographical scope for the common practice according to the Guideline for common practice v.2.0 /61/. b) As per information obtained from the National Association of Lime Producers (ANFACAL), officially recognized organism in Mexico, the number of plants with an installed capacity within the applicable output range is 8. c) According to the National Association of Lime Producers (ANFACAL) /43/ and /44/, not even one plant has officially recognized the use of biomass residues as energy source and there are not official registers of the use of these residues as fuel for kilns in the production of lime or CaO. At national level, the only fuels used in regular basis are fuel oil, petroleum coke and natural gas. d) All of the latest plants use fossil fuels as it is common practice in the country, none of them has officially recognized the use of biomass residues as alternative fuel and all of them produce goods with comparable quality as the proposed project plant. e) The installed capacity of Calidra de Occidente S. A. de C. V. CaO plant is 1,180 tpd, which means that the applicable output range for this analysis goes from 590 tpd to 1,770 tpd. f) Projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholders consultation or before the start date of proposed whichever is the earlier. This project was published for global stakeholder consultation on 17/03/2012 – 15/04/2012 /1/ and the staring dates of the project 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

No.	Criteria selected	Determination by the validation team	Criteria justified
		activity were on 18/03/2011, so the projects started commercial operation before 18/03/2011.	
STEP 3: Non-CDM related projects (N_{all})			
1	Non-CDM Projects	<p>According to “Tool for demonstration and assessment of additionality” version 07 /11/, CDM project activities (registered project activities and project activities which have been published on the UNFCCC website for global stakeholder consultation as part of the validation process) are not to be included in common practice analysis. According to the National Association of Lime Producers (ANFACAL) /42/ and /43/, officially recognized organism in Mexico, not even one plant has officially recognized the use of biomass residues as energy source and there are not official registers of the use of these residues as fuel for kilns in the production of lime or CaO.</p> <p>Hence $N_{all} = 0$</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
STEP 4: Identify projects with different technologies ($N_{diff.}$)			
1	Plants with different technology with proposed project	<p>As per information obtained from the National Association of Lime Producers (ANFACAL) /43/ and /44/, officially recognized organism in Mexico, the number of plants with an installed capacity within the applicable output range is 8. None of those plants are undergoing the registration process as CDM project activities, all of them use fossil fuels as it is common practice in the country, none of them has officially recognized the use of biomass residues as alternative fuel and all of them produce goods with comparable quality as the proposed project plant.</p> <p>Hence $N_{diff} = 0$</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
STEP 5: Confirmation on non-common practice			
1	Non-common practice	<p>Based on the review of the the current country practices and after review of other registered projects, and comparing with the size a quantity of installations present in Mexico. Then the share of similar projects (F) is calculated as $F = 1 - N_{diff} / N_{all}$</p> <p>As stated above, $F = 1 - 0/0$ is undefined; and $N_{all} - N_{diff}$ is equal to zero</p> <p>Finally F value is undefined, but $N_{all} - N_{diff}$ value is zero lower than 3.</p> <p>The validation team confirms that the actual project activity is not a common practice in the host country.</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

3.5.6 Conclusion of assessment of Additionality

The CDM was seriously considered by the PP. The evidences were transparently reviewed by the validation team and considered to be effective. Investment analysis and sensitivity analysis clearly demonstrate that the proposed project activity is financially unattractive. Common practice analysis was carried out showing that the proposed project activity is not common practice. Therefore, the proposed project activity is not business-as-usual, i.e. the proposed project activity is additional.

3.6 Monitoring

It is opinion of the validation team that the monitoring plan is in compliance with the requirements of the methodology AM0036 “Fuel switch from fossil fuels to biomass residues in heat generation equipment”, version 04.0.0.

The monitoring plan was validated reviewing the PDD /2/ and supporting documentation.

It is opinion of the validation team that the project participant will be able to implement the monitoring plan in the context of the project activity. The project monitoring plan is in compliance with the monitoring methodology AM0036 “Fuel switch from fossil fuels to biomass residues in heat generation equipment”, version 04.0.0.

As correct addressed in the Monitoring plan all data pertaining to GHG emission reduction calculations will be monitored and recorded through trained personnel as per the management system present at the project site. Durign the project activity among 5 persons are expected to be hired. This new personnel will receive the proper training in relation with security, the current management system to register and control the information related to the project activity and instructions about the operation and control of the equipments for pre treatment and feeding of the biomass residues to the process.

The description presented in the PDD on the monitoring plan explains how the organization will fulfil the monitoring plan. Action driven by adequate training and rise in competence for the workers related to the project are one of the actions present in the PDD.

It is DOE opinion that monitoring plan of project activity can be implemented without any kind of restriction. The project monitoring plan is in compliance with the monitoring methodology AM0036 version (04.0.0)
It is DOE’s opinion, that the project participant is able to implement the monitoring plan.

3.6.1 Parameters determined ex-ante

Sl. No.	Parameters	Description / Evaluation
1	GWP_{CH_4}	Global Warming Potential of methane. Default value as per IPCC Guidelines for National Greenhouse Gas Inventories 25 t CO ₂ e / t CH ₄ second commitment period.
2	$\eta_{heat,FF}$	Average net efficiency of the heat generation equipment if fired with fossil fuels in the baseline. Efficiency of 100% is assumed as a conservative value, as per methodology AM0036/ version 04.0.0 /10/.
3	$FC_{i,n}/FC_{i,n-1}/FC_{i,n-2}$	Three years data from fuel consumption data logs at the project site, 2008-2010 period has been chosen as the most recent three years period applicable for the analysis of the historical data for determining the baseline emissions and estimate the emissions reduction calculation. The heat generation equipments considered within the boundary of the project activity are the 2 Maerz kilns: one of 400 tpd to be retrofitted for the use of biomass residues, and a new 600 tpd already enabled with the option of the use of use of biomass residues evidence realated to the commissioning date for the 400 and 600 tpd kilns, from Maerz was provided /31/. Quantity of fossil fuel type i fired in all heat generation equipment at the project site during the historical year n, n-1 or n-2, where n corresponds to the year prior to implementation of the project activity. Data crosschecked on

		consumption records in the installation, data verified in inventories, purchases and fuel bills /36/, /37/ and /39.																				
		<table><tr><td></td><td colspan="3">Fuel consumption (tons/year)</td></tr><tr><td>Fuel type</td><td>2008</td><td>2009</td><td>2010</td></tr><tr><td>Petcoke</td><td>0</td><td>0</td><td>11,285</td></tr><tr><td>Fuel Oil</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Diesel</td><td>0</td><td>0</td><td>17</td></tr></table>		Fuel consumption (tons/year)			Fuel type	2008	2009	2010	Petcoke	0	0	11,285	Fuel Oil	0	0	0	Diesel	0	0	17
	Fuel consumption (tons/year)																					
Fuel type	2008	2009	2010																			
Petcoke	0	0	11,285																			
Fuel Oil	0	0	0																			
Diesel	0	0	17																			
4	EF _{gridy}	Ex-ante emission factor for the grid in year y. Verified in Appendix 4 of PDD /2/ and Calculation model /21/ and complies with Tool to calculate the emission factor of an electricity system v.05.0.0 /13/. 0.513 tCO2/MWh																				
5	EF _{CO2,f}	Default CO2 emission factor for freight transportation activity f has been adopted based on the tool “Project and leakage emissions from road transportation of freight” (version 01.1.0) in conservative manner. 129 g CO2/t km																				

The validation team confirms that all relevant parameters have been sufficiently considered and the values of the parameters are real, measureable and conservative.

3.6.2 Parameters monitored ex-post

The validation team identified by means of document review the list of parameters required approved methodology AM0036: Fuel switch from fossil fuels to biomass residues in heat generation equipment (version 4.0.0).”

According to the approved methodology AM0036 (version 4.0.0), the following parameters will be monitored:

Sl. No.	Parameters	Description
1	EF _{FF,CO₂,y}	<p>CO₂ emission factor of the fossil fuel type displaced by biomass residues for the year y.</p> <p>The upper value of the effective CO₂ emission factor for combustion has been used as provided in table 1.4 of Chapter1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html /62/.</p> <p>EF_{FF,CO₂,y}, as a conservative approach, the least carbon intensive fuel type should be used among the fossil fuels types used at the project site during the most recent 3 years prior to the implementation of the project activity and the fossil fuels used in the equipment at the project site due the year y.</p> <p>The monitoring of this parameter will be annually.</p>
2	HG _{PJ,total,y}	<p>Total heat generated in all heat generation equipment at the project site, using both biomass residues and fossil fuels, during the year y. This parameter will be measured through the management system Microsoft Dynamics AX 2009 /45/, which will allow them to have a more accurate and strict control of the data gathering and monitoring.</p> <p>The monitoring of this parameter will be Continuously, aggregated annually.</p>
3	BF _{k,y}	<p>Quantity of biomass residue type k fired in all units of heat generation equipment at the project site during the year y. This parameter will be measured through weighting hopper with 1000 kg capacity and an accuracy of ±0.5 kg and these shall be recalibrated according to manufacturer specifications, but at least once each 3 years, as per correctly stated in the</p>

		<p>monitoring plan.</p> <p>The monitoring of this parameter will be Continuously, aggregated at least annually.</p>
4	Moisture content of the biomass residues.	<p>Moisture content of each biomass residue type k. This parameter will be monitored for each batch of biomass of homogeneous quality. As per correctly stated in the monitoring plan and the methodology AM0036 (version 4.0.0) /10/.</p> <p>The moisture content will be monitored for each batch of biomass of homogeneous quality.</p> <p>The weighted average will be calculated for each monitoring period and used in the calculations.</p>
5	FC _{i,y}	<p>Quantity of fossil fuel type i fired in all heat generation equipment at the project site during the year y. This parameter will be monitored through weighting hopper with 1000 kg capacity and an accuracy of ± 0.5 kg, the fossil fuels comprehended in this parameter are the ones of the historical data. Instruments will be recalibrated at appropriate intervals according to manufacturer specifications, but at least once in 3 years.</p> <p>Furthermore, as per correctly addressed in the approved methodology AM0036 (version 4.0.0) cross-check the measurements with an annual energy balance that is based on purchased quantities and stock changes shall be performed.</p> <p>The monitoring of this parameter will be Continuously, aggregated annually.</p>
6	FC _{i,y}	<p>Quantity of fuel type i combusted during the year y attributable to the project activity. This parameter will be monitored through flow meter with a measurement range from 150 to 2500 l/min with an accuracy of $\pm 1\%$. Instruments will be recalibrated at appropriate intervals according to manufacturer specifications, but at least once in 3 years.</p> <p>The monitoring of this parameter will be Continuously, aggregated annually.</p>
7	NCV _i	<p>Net calorific value of fossil fuel type i.</p> <p>As per methodology the PP has stated in the monitoring plan that during the monitoring period either measurement in reputed laboratories will be conducted or reliable local or national data or IPCC default net calorific values will be used if they are deemed to reasonably represent local circumstances.</p> <p>The monitoring of this parameter is at least every six months, taking at least three samples for each measurement.</p>
8	EF _{CO₂,i,y}	<p>The upper value of the effective CO₂ emission factor for combustion has been used as provided in table 1.4 of Chapter1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html /62/.</p> <p>The monitoring of this parameter will be annually.</p>
9	EC _{PI,y}	<p>On-site electricity consumption attributable to the project activity during the year y. This parameter will be monitored through power monitoring device (SENTRON PAC 3200) has the following measuring accuracy:</p> <ul style="list-style-type: none"> - Voltage: 0.3% - Current: 0.2% - Power: 0.5%

		<ul style="list-style-type: none"> - Frequency: 0.05% - Power factor: 0.5% - Active energy: Class 0.5S acc. to IEC 62053-22:2003-01. - Reactive energy: Class 2 acc. to IEC 62053-22:2003-01. <p>Intruments will be recalibrated at appropriate intervals according to manufacturer specifications, but at least once in 3 years.</p> <p>Furthermore, as per correctly addressed in the approved methodology AM0036 (version 4.0.0) cross-check measurement results with invoices for purchased electricity if available is required.</p> <p>The monitoring of this parameter will be Continuously, aggregated annually.</p>
10	NCV _i	<p>Net calorific value of fossil fuel type i.</p> <p>As per methodology the PP has stated in the monitoring plan that during the monitoring period either measurement in reputed laboratories will be conducted or reliable local or national data or IPCC default net calorific values will be used if they are deemed to reasonably represent local circumstances.</p> <p>The monitoring of this paramter is at least every six months, taking at least three samples for each measurement.</p>
11	NCV _k	<p>Net calorific value of biomass residue type k. Measurements shall be carried out at reputed laboratories and according to relevant international standards, based on dry biomass. This shall be performed at least each six months, as per correctly stated in the methodology and the section B.7.2 of the sampling plan.</p>
12	-	<p>Quantity of biomass residues of type k or m that are utilized (e.g., for energy generation or as feedstock) in the defined geographical region.</p> <p>As per addressed the methodology Monitoring of this parameter is applicable if approach L2 is used to rule out leakage or if approach L4 is used in combination with approach L2 to rule out leakage for the substituted biomass residue type m.</p> <p>The monitoring of this paramter is at least every six months, taking at least three samples for each measurement.</p>
13	-	<p>Quantity of available biomass residues of type k or m in the region.</p> <p>As per addressed the methodology Monitoring of this parameter is applicable if approach L2 is used to rule out leakage or if approach L4 is used in combination with approach L2 to rule out leakage for the substituted biomass residue type m.</p> <p>The monitoring of this parameter will be Continuously.</p>
14	NCV _{n,y}	<p>Net calorific value of biomass residues of category n in year y. Measurements shall be carried out at reputed laboratories and according to relevant international standards, this shall be performed at least each six months as per correctly stated in the methodology and the section B.7.2 of the sampling plan.</p> <p>The monitoring of this paramter is at least every six months, taking at least three samples for each measurement.</p>
15	D _{f,m}	<p>Return trip road distance between the origin and destination of freight transportation activity f in monitoring period m. Data is Determined once for each freight transportation activity f for a reference trip using the vehicle odometer or any other appropriate sources (e.g. on-line sources).</p> <p>As per correctly stated in the "Tool Project and leakage emissions from road</p>

		<p>transportation of freight, This parameter will be monitored through Records by project participants or records by truck operators.</p> <p>The monitoring of this parameter is determined once for each freight transportation activity f for a reference trip using the vehicle odometer or any other appropriate sources (e.g. on-line sources).</p>
16	FR _{f,m}	<p>Total mass of freight transported in freight transportation activity f in monitoring period m. As per correctly stated in the “Tool Project and leakage emissions from road transportation of freight, This parameter will be monitored through scales with capacity of 80,000 Kg with and accuracy of ± 10 Kg.</p> <p>Records by project participants or records by truck operators.</p> <p>The monitoring of this parameter will be Continuously.</p>

In summary, the validation team is convinced of compliance of the monitoring plan with the requirements of the monitoring methodology of AM0036 (version 4.0.0) /10/. During the on-site assessment, the validation team interviewed the PP that the monitoring arrangements described in the monitoring plan are feasible within the project design. The emission reductions resulting from the proposed CDM project activity can be reported ex post and verified.

3.6.3 Management system and quality assurance

The DOE validation team has assessed the proposed management system and how does the quality will be assured in the proposed project activity. Structure for monitoring responsibilities has been identified. The outline of the operational procedure was briefly described in the PDD including a monitoring operation and organizational chart that include a:

- General Procedure
- Roles and Responsibilities of the organization
- Maintenance and operation of the heat generation equipment
- Staff training
- Failure or emergency procedure

General procedure

The project activity will be operated and managed by the project proponents. All data pertaining to GHG emission reduction calculations will be monitored and recorded by trained personnel as per the management system present at the project site. Nowadays, Calidra de Occidente is improving and migrating its management system to Microsoft Dynamics AX 2009 /60/, which will allow them to have a more accurate and strict control of the data. This management system to ease its operation, data gathering and monitoring, letting it be in line with the requirements of the CDM methodology applied in the PDD and the proposed monitoring plan.

Responsibilities organization

The monitoring and recording of the required parameters will be carried out by trained personnel as the Administrative Personnel that will report to the CDM coordinator designated by Calidra de Occidente will be in charge of approving the calculations and the monitoring report.

Staff training

Technical trainings will be provided for personnel directly involved in operation and maintenance, also CDM monitoring training will provided to key staff involved in to it. Trainings will be mandatory for new staff.

Quality Control & Failure emergency procedure

In case of failure in the measurement equipments or any value identified as being unusual in this manner will be verified, review and corrected taking the most conservative approach. As per monitoring plan and/or approved methodology, reference values should be taken from local or national appropriate data (e.g. 2006 IPCC Guidelines for National Greenhouse Gas Inventories Measurements of the fuels combusted (fossil and biomass residues) will be conducted in calibrated scales, in case of identifying any significant deviation in relation with previous data, a correction will be conducted for the deviated measured applying the maximum error in a conservative manner.

3.7 Sustainable Development

The project is considered to be contributing to sustainable development in the host country (Mexico), by the utilization of biomass residues (agricultural and forestry) with no current use as an alternative fuel for the heat generation equipment of the plant of Calidra de Occidente S. A. de C. V. in the production process of Calcium Oxide (CaO).

The project participant has submitted Unique Environmental Licence (Licencia Ambiental Unica, LAU) of Calidra de Occidente S. A. de C. V with a positive resolution on August

The validation team concluded that the project contributes to sustainable development based on the DNA Letter of Approval and the EIA resolution /3/.

3.8 Environmental Impacts

The PDD includes a comprehensive description of the environmental impact of the project activity. This description includes type of zone where the project activity will be located as well as the municipalities. Based on the observations, audit track and local evidence, the validation team concludes that no significant negative environmental impact were identified associated to the development of the project activity.

As correctly stated in the PDD the biomass residues to be used as part of the project activity do not qualify as a hazardous material or hazardous residue, being why no additional permits to the ones needed for the normal operation of the quicklime plant are required. Nevertheless, for the project activity to become operational, it will be required the update of the Unique Environmental License issued by SEMARNAT /51/.

Besides of this, is important to address that in accordance with the applicable law LGEEPA (General Law for the Ecological Equilibrium and Environmental Protection /77/, the current project does not require a specific Environmental Impact Assessment, due to the project activity will not cause any significant negative impact in the environment, being the only negative impacts the project emissions taken into consideration for the emission reductions calculation.

The validation team concludes that the environmental impact by the project activity is been assessed by the project proponent and the same is stated in the PDD /2/. To confirm the impact associated with the project proponent, the validation team has physically inspected during the on-site visit and also through conducting the relevant stakeholders. It is validation team's opinion that the project activity does not cause the adverse environmental impacts and there are no regulations or requirement by the host country to conduct the EIA for the project activity. The same is confirmed from the regulation /51/.

3.9 Local Stakeholder Consultation

According to the local registration, project participant has to perform a stakeholders consultation. The local consultation was posted at the town hall announcing the meeting.

The local stakeholder's consultation took place in December 05th and 07th 2011 /47/, invitations were sent through email to stakeholders representatives of different organisms from the municipality of

Tecolotlán and the state of Jalisco, receiving their confirmation through the same mean. The project was presented to the following organisms:

- Municipal Presidency of Tecolotlán.
- Secretary of Environment for Sustainable Development (SEMADES)
- Secretary of Rural Development
- Secretary of Agriculture, Livestock, Rural Development, Fishing and Food (SAGARPA)
- Federal Delegation of SEMARNAT in Jalisco
- Local stakeholders (workers, land owners, farm workers, employees and people of the municipalities de Tecolotlán and Amatitán).

Besides of this, a national stakeholder's consultation was carried over the past November 29th of 2011 /49/, in which Calidra de Occidente S. A. de C. V. presented the project in detail to the Designated National Authority of the CDM in Mexico (Interministerial Commission on Climate Change or ICCC)

Project participant has provided proper evidence of the people that attended to the local stakeholder consultations. The identification of the stakeholders is totally plausible. Invitations were published and distributed in the municipalities where the project activity will be carried out in order to call stakeholder to participate in the local consultation. These means are considered to be appropriate for the local consultation.

Comments received by local stakeholders were very positive since they were related to the possible development that project activity can offer to the community

- Marco Ruelas: Is a very important project with short term results and a long term future. Government must participate so it can help the Project to be implemented as fast as possible.
- Jorge Gil: Is very important to have this alternative, climate change must be fight back.
- Maria de los Angeles Hernandez: It will be have to be checked the new risks to be faced, meaning the gases that could be generated due to the acidity of the agave bagasse. That is the only matter because as part of the sustainable development is good to know the potential risks to health that could be faced.
- Hector López: I think is a good alternative for the locality to reduce the pollution produced by the residues.

TUV Rheinland considers the local stakeholder consultation carried out adequately.

3.10 Comments by Parties, Stakeholders and NGOs

The PDD version 01 of "05/03/2012" was made publicly available for global stakeholder consultation on (<http://cdm.unfccc.int/Projects/Validation/DB/JAGVGO7IRQ6HWV0DH8E847Z6WNJESF/view.html>) from "17/03/2012 – 15/04/2012 in order to invite comments from public stakeholders. The PDD was published prior to commencement of the validation and the validation team has taken a due note on the outcome of its result. No public comments have been received during that period.

Appendix A

CDM Validation Protocol

Use of biomass as an alternative fuel for the production of Calcium Oxide in

Mexico

Report No. 01 997 9105068929

Table 1: Validation requirements (based on § 37 of the CDM Modalities and Procedures and on CDM Validation and Verification Standard version 07.0)					
Checklist question	Ref.	MoV2	Findings, comments, references, data sources	Draft conclusion	Final conclusion
1. Approval(VVS Section 7.6, 7.7, 7.8 & 7.9)					
1.8 Have Letters of Approval have been provided from all involved Parties?	/3/	DR	CAR 1: PP shall provide the LoA from Mexico's DNA.	CAR-01	O.K.
1.2 Are all Parties, who issued the LoA, Parties to the Kyoto Protocol and are this, stated in the LoA?	/3/	DR	Please refer to CAR 01	CAR-01	O.K.
1.3 Is every LoA from the Parties involved issued by an organization listed as Designated National Authority (DNA) on the UNFCCC web site?	/3/	DR	Mexico's DNA is the Climate Change Inter-Ministry Commission (Comisión Intersecretarial de Cambio Climático). Contact: Sr. Luis Muñozcano Álvarez e-mail: luis.munozcano@semarnat.gob.mx Phone: (52-55) 5490 2115 Av. San Jerónimo 458, Piso 3, Col. Jardines del Pedregal, Delegación Álvaro Obregón, 01900 México, D.F. Please refer to CAR 01	CAR-01	O.K.
1.4 Is the participation in the CDM project activity voluntary and is this stated in all LoAs?	/3/	DR	Please refer to CAR 01	CAR-01	O.K.
1.5 Is the LoA unconditional with respect to 1.2 to 1.4?	/3/	DR	Please refer to CAR 01	CAR-01	O.K.
1.6 Is the title of the CDM project activity as given in the PDD identical with the title given in all LoAs and Modalities of Communication?	/3/	DR	CAR 02: PP shall submit the Modalities of Communications Letter. Please refer to CAR 01	CAR-01 CAR-02	O.K.

² MoV = Means of Validation, DR = Document Review, I = Interview, www = internet search.

1.7 If any of provided LoAs contains additional specification of the CDM project activity (PDD version number, validation report version number, amount of ER, etc.) are those specifications valid and consistent with other documents?	/3/	DR	Please refer to CAR 01	CAR-01	O.K.
1.8 Does the project activity involve any public funding from Annex I Parties? If yes, has Annex I Party provided a written confirmation that the use of such funding does not lead to the diversion of the official development assistance.	/3/	DR	Project activity does not involve any public funding from Annex I Country, as stated in section A.4.5.	CAR-01	O.K.
1.9 Is the MOC provided in line with the latest template available from the UNFCCC	/5/	DR	<p>Please refer to CAR 02: As per “ Procedures for Modalities of Communication between Project participants and the Executive Board the Moc shall be in line with the following paragraph :</p> <p>9 Signature is defined as an agreed means of authentication of an MoC statement by a project participant, or a given communication from a focal point entity, as the context requires. It may be either an authenticated handwritten signature, accompanied with a company seal or stamp if appropriate, or a cryptographic electronic signature enrolled in the CDM Information System.</p> <p>Written confirmation obtained by the PP's stating the authorization, specimen signatures and personal details, employment status is valid and accurate" would be acceptable.</p>	CAR-2	O.K.
1.10 Is MOC correctly filled and signed by authorized signatories identifying the focal point?	/5/	DR	Please refer to CAR 02	CAR-02	O.K.
1.11 Is the written confirmation obtained by the PP's stating the authorization, specimen signatures and personal details are valid and accurate?	/6/, /7/	DR	Please refer to CAR 02	CAR-02	O.K.

2. Participation (VVS Section 7.6, 7.7 & 7.8)					
2.1 Are the Parties and project participants (PP) listed in the section A.3 of the PDD correctly and is this information consistent with the contact details provided in Annex 1 of the PDD?	/1/, /2/	DR	Yes, the involved party (Mexico) and the project participants (Calidra de Occidente S.A de C.V. and Carbon Solutions de Mexico S.A. de C.V.) are listed in the PDD section A.3 and Annex 1. However, CAR 03 “Calidra S.A” in section A.4.3 is not consistent with the Annex 1. PP is requested to address the correct name of the company within the whole document	CAR-03	O.K.
2.2 Has every Party involved approved the participation of each corresponding PP, either by means of a LoA or by a separate written document?	/2/, /3/	DR	Please refer to CAR 01	CAR-01	O.K.
2.3 Do all participating Parties fulfill the participation requirements as follows: a) Party has ratified the Kyoto Protocol b) Party has designated a Designated National Authority c) The assigned amount has been determined	/3/, /4/	DR	Please refer to CAR 01	CAR-01	O.K.
2.4 Do the letters of approval meet the following requirements? a) LoA confirms that 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	/3/, /4/	DR	Please refer to CAR 01	CAR-01	O.K.
3. Project Design Document (VVS Section 7.10)					
3.1 Is the PDD presented for validation based on the latest template available at the UNFCCC website?	/1/, /2/, /9/	DR	Yes, the project developer applies the latest template available for CDM PDD. Version 03. However,	CL-04	O.K.

			CL 04 PP shall clarify if the template for CDM PDD will be updated according to the latest guideline approved by the EB 66. Otherwise, PP should check the timeline for the request of registration.		
3.2 Has the PDD been established in accordance with the CDM requirements for completing PDDs issued by the CDM EB?	/1/, /2/, /9/	DR	CAR 05 a) The format dates stated in the PDD shall be presented as per Guidelines form for completing PDD (DD/MM/YYYY), thus section A.1 shall be corrected accordingly, as well other PDD sections where dates are reference. b) The geographic coordinates shall be presented as per UNFCCC format, in the decimal format with+/- sign and should have a precision of 4 (four) decimals.	CAR-05	O.K.
4. Project Description (VVS Section 7.11)					
4.1 Does the PDD contain a description, which provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation? 4.1b) Is the description (incl. any process flow-charts, Spreadsheets etc.) complete, coherent and consistent with the provisions of the monitoring plan? 4.1c) Is the project's location clearly defined?	/1/, /2/	DR	CAR 06 a) Basic information about the kiln production capacity, biomass disposal should be provided and addressed in the PDD. b) PP is requested to provide a plant layout in section A.4.1.4, indicating which are the existing facilities, which are the new facilities before the project implementation c) PP is requested to provide and address a process flow diagram in the PDD d) PP should clarify the range on the	CAR-06 CL-07	O.K.

			<p>fuel substitution</p> <p>e) PP is requested to quantify the number of employees expected for the operation of the project activity</p> <p>f) Biomass storage design should be provided to the DOE.</p> <p>CL 07</p> <p>a) PP should clarify if the rotary dryer consist on electrical heating or fossil fuel heating</p> <p>b) PP shall clarify the major technical specifications (e.g. Kiln length, radius, operating temperature, production capacity)</p> <p>c) PP should clarify if the technology is produced domestically or imported. Also, PP should specify the origin.</p> <p>d) In section A.4.3, PP shall clarify if the agave bagasse is on anaerobic or aerobic conditions. PP shall states the baseline scenario</p> <p>e) PP shall clarify if the project description stated in the GSP PDD section A.4.3 is in line with the monitoring plan.</p> <p>f) PP shall clarify which equipment is affected/retrofitted by the project activity.</p>		
4.2 In the case of greenfield project activity, is the project design described sufficiently by means of specifications, drawings and manuals?	/1/, /2/, /10/	DR	<p>No, the project activity consists on a retrofit of a lime kiln to use biomass residues and the installation of a new kiln with the equipment to burn alternative fuels.</p> <p>Please refer to CAR 06</p>	CAR 06	O.K.

4.3 Does the project activity reflects current good practices, uses state of the art technology or would the technology result in a significantly better performance, than any commonly used technologies in the host country?	/1/, /2/, /10/	DR	Please refer to CAR 06	CAR 06	O.K.
4.4 In cases where the project activity involves the alteration of an existing installation or process, does the PDD provide a clear description of the differences between the project and the pre-project scenario?	/1/, /2/, /10/	DR	Yes, the project activity consists on a retrofit of a lime kiln to use biomass residues and the installation of a new kiln with the equipment to burn alternative fuels Please refer to CAR 06	CAR 06	O.K.
<p>4.5 What type is the project? Is it a microscale, or small scale: If small scale – whether is it Type I or type II or type III? Type I – is maximum output capacity is equal or less then 15MW Type II – is maximum output equal or less then 60GWh/year Type III – is maximum output exceeds 60GWh/year</p> <p>i) Project in existing facility or utilizing existing equipment(s) ii) Project is either a large scale project or a non-bundled small scale project with emission reductions exceeding 15 000 tCO₂e per year. In this case, a site visit must be performed. iii) Project is a bundled small scale project, with each project in the bundle with emission reductions not exceeding 15,000 tCO₂e per year. In such case the number of physical site visits may be based on sampling, if the sampling size is appropriately justified through statistical analysis. iv) The project is an individual small scale project</p>	/1/, /2/, /10/	DR	<p>i) The project activity consists on a retrofit of a lime kiln to use biomass residues with the aim of substituting pet-coke (main fuel used for lime production) and the installation of a new kiln with the equipment to burn alternative fuels. ii) The project is a large scale with emission reductions exceeding 15 000 tCO₂e per year. A site visit was performed by the assessment team. iii) N/A iv) N/A v) N/A</p> <p>CL 24: The PP is resquested to clarify why the annual estimation of emission reductions stated in the GSP-PDD 92,577 t CO₂e was significantly changed with the latest version of the PDD where the annual emission reductions are 52,063t CO₂e.</p>	CL 24	O.K.

<p>activity with emission reductions not exceeding 15 000 tCO₂e per year. In this case, DOE may not conduct a physical site visit as appropriate.</p> <p>v) Greenfield project</p> <p>For small scale biomass, biofuel and biogas project activity – the maximal limit is 15MW (e) and 45MWth thermal output.</p> <p>For small scale solar energy projects with exceptional of parabolic and trough type collectors – rest all shall have maximum output eligibility limit in terms of aperture area is 64000m².</p> <p>If microscale – whether is it Type I or type II or type III?</p> <p>Type I – is maximum output capacity is equal or less then 5MW, or</p> <p>Type II – is maximum output equal or less then 20GWh/year, or</p> <p>Type III – is maximum emission reductions at a scale of no more than 20kt CO₂e/year.</p>					
<p>4.6 How was the design of the project assessed?</p> <p>i) Physical site inspection</p> <p>ii) Reviewing available designs and feasibility studies</p>	/20/	DR I	<p>An onsite visit was performed on May 7th & 8th, 2012 within the lime plant from Calidra de Occidente S.A. de C.V in Tecolotlan, state of Jalisco, Mexico</p> <p>Please refer to CAR 06</p>	CAR 06	O.K.
<p>4.7 Does the project qualify as a small scale CDM project activity as defined in paragraph 6(c) of decision 17/CP.7 on the modalities and procedures for the CDM?</p>	/1/, /2/,/10/	DR	N/A	O.K.	O.K.
<p>4.8 In case of small scale project – is the project a bundle project activity? In this case the bundle output shall not exceed the small scale project activity limit</p> <p>Refer « general principles for bundling»</p>	/1/, /2/,/10/	DR	N/A	O.K.	O.K.
<p>4.9 Is the small scale project activity a debundled</p>	/1/,	DR	N/A	O.K.	O.K.

component of a larger project activity in accordance with the rules defined in appendix C of the simplified modalities and procedures for small-scale CDM project activities? Refer «guidelines on assessment of debundling for SSC project activities»	/2/,/10/				
5. Baseline and Monitoring methodology(VVS Section 7.12)					
5.1 General requirements (VVS Section 7.12.1)					
5.1.1 Is the methodology used in the project activity approved by the CDM EB and is the selected version still valid?	/1/, /2/,/10/	DR	Yes, the methodology used is approved by the CDM EB, AM0036 version 04.0.0 “Fuel switch from fossil fuels to biomass residues in heat generation equipment” was valid at the moment of the publication of the PDD.	O.K.	O.K.
5.2 Applicability of the selected methodology (VVS Section 7.12.2)					
5.2.1 How was it validated that the project complies with the applicability criteria set out in the methodology	/1/, /2/,/10/	DR	<p>The validation team determined that the applicability conditions of all the tools mentioned in the methodology AM0036 version 04.0.0 are taken into account in the current project activity. The methodology is applicable to project activities that switch from use of fossil fuels to biomass residues in heat generation equipment.</p> <p>1.- Retrofit of existing heat generation equipment. 2.- Replacement of existing heat generation equipment. 3.- Installation of new heat generation equipment. 4.- Installation of new heat generation equipment and retrofit and/or replacement of existing heat generation equipment.</p> <p>Hence The proposed project activity qualifies</p>	O.K.	O.K.

			for the 4 th scenario of the methodology, due to the retrofitting of existing heat generation equipment and the installation of new equipment with the adequate technology to use biomass residues.		
5.2.2 How was it validated that the project complies with the applicability criteria set out in the methodology	/1/ /2/,/10/	DR	The Project only complies with the applicability criteria set out in the methodology AM0036 version 04.0.0.	O.K.	O.K.
5.2.2 Are all applicability conditions of the selected baseline and monitoring methodology and all tools involved satisfied by the project activity?	/1/ /2/,/10/	DR	CL 08 a) PP shall clarify in what is the retrofit about b) PP shall state the biomass residues types, quantities and source should be documented in a transparently manner in the PDD c) PP should clarify in section B.4 the local regulations applicable to the project activity.	CL-08	O.K.
5.2.3 Is the selection of the applied baseline and monitoring methodology justified?	/1/ /2/,/10/	DR	Yes, the selection of the baseline and methodology is justified in the GSP PDD	O.K.	O.K.
5.2.4 Is the selected methodology correctly quoted in all related documents?	/1/ /2/,/10/	DR	Yes, the selected methodology is correctly quoted in all related documents.	O.K.	O.K.
5.2.5 Does the PDD sufficiently describe all the GHG emission sources or sinks occurring as a result of project activity, which have not been accounted for under the selected methodology and are expected to contribute more than 1% of the overall expected average annual emission reductions?	/1/ /2/,/10/	DR	Yes, In the GSP PDD all the GHG emissions sources or sinks occurring as a result of the project activity are stated.	O.K.	O.K.
5.3 Project boundary (VVS Section 7.12.5)					
5.3.1 Does the PDD correctly describe the project boundary? Are they clearly defined and in accordance with the methodology?	/1/ /2/,/10/	DR	Yes, the project boundary is clearly stated and defined as per methodology in the GSP PDD.	O.K.	O.K.

5.3.2 Does the PDD correctly indicate and describe the emission sources and sinks of GHG gases that are included in the project boundary?	/1/ /2/,/10/	DR	Yes, the project boundary is clearly stated and defined as per methodology in the GSP PDD.	O.K.	O.K.
5.3.3 In cases where the methodology allows project participants to choose whether a source or gas is to be included in the project boundary, is the choice explained and justified by PPs?	/1/ /2/,/10/	DR	CL 09 PP shall clarify in section B.3 in the table 4 why the CH4 emissions were discarded for project (PE) and baseline emissions (BE) as per EB 41 Annex 12	CL 09	O.K.
5.3.4 Does the project involve other emissions sources not foreseen by the methodologies that may question the applicability of the methodology? Do these sources contribute with more than 1% of the estimated emission reductions of the project?	/1/ /2/,/10/	DR	No, main emission source in the baseline scenario is CO2 as per methodology.	O.K.	O.K.
5.4 Baseline identification (VVS Section 7.12.6)					
5.4.1 Has the procedure contained in the selected methodology to identify the most reasonable baseline scenario been applied correctly and documented in the PDD?	/1/ /2/,/10/ /11/	DR	The PP has applied the AM0036 v. 4.0.0, which indicates an specific procedure for the selection of the most plausible scenario, this identification is described in the section B.4 and B.5; the baseline scenario in the GSP PDD is consistent to the methodology statements. However, CAR 10 The tool version referenced in the GSP PDD for “Tool for the demonstration and assessment of additionality” is not consistent within the whole document. PP is requested to correct it as needed.	CAR 10	O.K.
5.4.1.1 Is the identified baseline scenario plausible?	/1/ /2/,/10/	DR	Yes, as the current practice is that thermal energy generation for the lime production is generated by the pet-coke combustion.	O.K.	O.K.
5.4.1.2 Are all assumptions stated in a transparent and conservative manner?	/1/ /2/,/10/	DR	Yes, the baseline scenario is described in the methodology.	O.K.	O.K.

5.4.2 Does the selected methodology require the use of tools and does PDD reflects that correctly?	/1/ /2/,/10/	DR	The tools required by the methodology were used and options available in the methodology on selection of methodology have been fulfilled. Such tools are: “Tool for the demonstration and assessment of additionality” version 07.0.0, “Emissions from solid waste disposal sites” version 6.0.1; “Tool to calculate the emissions factor for an electricity system” version 02.2.1; “Tool to calculate project or leakage CO2 emissions from fossil fuel combustion” version 02; “Tool to determine the baseline efficiency of thermal or electric energy generation systems” version 01; “Tool to determine the remaining lifetime of equipment” version 01; “Assessment of the validity of the original baseline and update of the baseline at the renewal of a crediting period” version 03.0.1.	O.K.	O.K.
5.4.2.1 Were all the tools applied correctly?	/1/ /2/,/10/	DR	Yes, the tools were followed step by step.	O.K.	O.K.
5.4.3 In case the methodology requires several alternative scenarios to be considered in the identification of the most reasonable baseline scenario, have all scenarios supplying comparable output and services that are to be supplied by the proposed project activity been considered and have no reasonable alternative scenario been excluded?	/1/ /2/,/10/	DR	Yes, all the alternative scenarios were discussed as per the methodology and no reasonable baseline scenarios have been excluded.	O.K.	O.K.
5.4.3.1 Has the choice of the baseline scenario been done using conservative assumptions?	/1/ /2/,/10/	DR	Yes, all the alternative scenarios were discussed as per the methodology and no reasonable baseline scenarios have been excluded.	O.K.	O.K.

5.4.4 Is the identified baseline scenario reasonable according to the assumptions, calculations and rationales used in the PDD and other reference sources?	/1/ /2/,/10/	DR	Yes, the baseline scenario is described as in the methodology.	O.K.	O.K.
5.4.6 Does the PDD describe how the national and sectoral policies, macro-economic trends and political aspirations relevant to the baseline scenario have been identified and considered in the PDD? Refer CDM PS para 45	/1/ /2/,/10/	DR	Please refer to CL 08	CL-08	O.K.
5.4.7 Does the PDD provide a verifiable description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the project activity?	/1/ /2/,/10/	DR	Please refer to CL 08	CL-08	O.K.
5.5 Algorithm and/or formulae used to determine emission reductions (VVS Section 7.12.7)					
5.5.1 Are all calculations applied and documented according to the selected methodology and in a complete and transparent manner to calculate emission reductions from the project activity? 5.5.1b) Are correct units applied and consistency between parameter dimensions and parameter value ensured?	/1/ /2/,/10/, /21/	DR	ER calculation spreadsheet has been submitted to the DOE in a verifiable manner. However, CAR 11 a) In the calculation spreadsheet, methodology version shall be corrected. b) PP shall be conservative in the ER calculation, therefore is requested to utilize “ROUND DOWN” function for BE and “ROUND UP” for PE & Leakage. c) In Annex 3, the emission factor for electricity is addressed ex-post, in the rest of the document is addressed ex ante. PP is requested to correct it. d) Footnote 14 of the GSP PDD shall be updated according to the evidence provided. e) Electricity consumption evidence	CAR-11	O.K.

			needs to be provided to the DOE.		
5.5.2 In case the methodology allows a selection between different options for equations or parameters, has adequate justification been given and have the correct equations and parameters been used, in accordance with the methodology selected?	/1/ /2/,/10/ /21/	DR	Yes, the equation and parameters applied to the PDD are in accordance with the methodology AM0036 v. 4.0.0.	O.K.	O.K.
5.5.3 In case some data and parameters will not be monitored throughout the crediting period, but have already been determined and fixed, are all data sources, assumptions and calculations correct, applicable to the proposed CDM project activity and conservative?	/1/ /2/,/10/ /21/	DR	Please refer to CAR 11	CAR 11	O.K.
5.5.3.1 Default parameter Title: GWP_{CH_4} Indication: GWP_{CH_4} = Global Warming Potential of methane valid for the commitment period (tCO_2/tCH_4). Units: tCO_2e/tCH_4 Default/Used value: 25 for the second commitment period of the Kyoto's protocol.	/1/,/2/ /10/,/72/	DR	This parameter is in accordance with the approved methodology AM0036 / Version 04.0.0, and the value adopted by the PP has been chosen in line with the second commitment period of the Kyoto's protocol, as per EB 69 annex 3.	O.K.	O.K.
5.5.3.2 Default parameter Title: $\eta_{heat,FF}$ Indication: Average net efficiency of the heat generation equipment if fired with fossil fuels in the baseline. Units: ratio Default/Used value: 100%	/1/,/2/ /10/	DR	100% has been chosen as a conservative default value, as per approved methodology AM0036 / Version 04.0.0.	O.K.	O.K.

5.5.3.3 Default parameter Title: $FC_{i,n}/FC_{i,n-1}/FC_{i,n-2}$ Indication: Quantity of fossil fuel type i fired in all heat generation equipment at the project site during the historical year n , $n-1$ or $n-2$, where n corresponds to the year prior to implementation of the project activity Units: Mass unit Default/Used value: Three most recent historical years prior to the implementation of the project activity.	/1/, /2/, /10/	DR	Three most recent historical years prior to the implementation of the project activity has been applied by the PP, in accordance with the approved methodology AM0036 / Version 04.0.0.	O.K.	O.K.
5.5.3.4 Default parameter Title: $EF_{grid,CM,y}$ Indication: Grid emission factor Units: tCO ₂ /MWh Default/Used value: 0.513 tCO ₂ /MWh	/1/, /2/, /10/, /21/, /66/, /67/	DR	Ex-ante emission factor for the grid in year y . Verified in Appendix 4 of PD and Calculation model, and complies with Tool to calculate the emission factor of an electricity system v.03.0.0 /13/.	O.K.	O.K.
5.5.3.4 Default parameter Title: $EF_{CO_2,f}$ Indication: Default CO ₂ emission factor for freight transportation activity f . Units: g CO ₂ /t km Default/Used value: 129 g CO ₂ /t km	/1/, /2/, /10/	DR	As per the methodological tool “Project and leakage emissions from road transportation of freight” version 01.0.0, the default CO ₂ emission factor takes into account the emissions generated by loaded outbound trips and empty return trips.	O.K.	O.K.

5.5.4 In case data and parameters will be monitored on implementation and hence become available only after validation of the project activity, are the estimates provided in the PDD for these data and parameters reasonable?	/1/, /2/, /10/	DR	CAR 12 a) PP is requested to add more information in the PDD how the parameters were selected, historical fuel consumption and how the calculation was performed for the ER calculus. b) Biomass transported is based on dry basis as per site visit observations. PP is requested to clarify and address it in the PDD. c) Diesel consumption and transportation data should be monitored ex-post.	CAR 12	O.K.
5.5.5 Have the major risks and uncertainties, which can influence the emission reduction estimates, been identified and addressed in the PDD?	/1/, /2/	DR	Please refer to CAR 12	CAR 12	O.K.
5.5.6 Are the calculations documented according to the approved methodology and in a complete and transparent manner in calculating the project emissions? Have conservative assumptions been used when calculating the project emissions?	/1/, /2/, /10/	DR	Yes, the equation and parameters applied to the PDD are in accordance with the methodology AM0036 v. 4.0.0 in a complete and transparent manner.	O.K.	O.K.
5.5.7 Are uncertainties in the project emission estimates properly addressed?	/1/, /2/, /7/, /10/	DR	Please refer to CAR 12	CAR 12	O.K.
5.5.8 Does any of the parameters require the use of sampling? If yes – how the sampling is been carried out Refer «standard for sampling and surveys for CDM project activities and programme of activities»	/1/, /2/, /10/, /73/	DR	As per methodology AM0036 Version 04.0.0 three variables shall be sampled ($NCV_{n,y}$, NCV_i and NCV_k), At least every six months, taking at least three samples for each measurement.	O.K.	O.K.
5.6 Leakage					
5.6.1 Has the leakage been identified and calculated according to the approved methodology?	/10/	DR	Leakage from the project is considered to be zero because biomass residues have not current use, according to stakeholders' interviews and their availability is 25% larger	O.K.	O.K.

			than the biomass residues utilized.		
5.6.2 Have the leakage been addressed in complete, conservative and substantiated manner? Note: for small scale project activity – the leakage should be considered within the non-annex 1 parties.	1/, /2/, /10/	DR	Please refer to 5.6.1	O.K.	O.K.
5.6.3 Are uncertainties in the leakage emission estimates properly addressed?	1/, /2/, /10/	DR	Please refer to 5.6.1	O.K.	O.K.
6. Methodology-related issues for afforestation or reforestation CDM project activities					
<i>Add specific A/R requirements – if applicable!</i>	/10/	DR	Not applicable for this CDM project activity	O.K.	O.K.
7. Additionality (VVS Section 7.12.8)					
7 a) What approach/tool does the project use to assess additionality? Is this in line with the methodology? In case of small-scale CDM project activities, is Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities applied considering also the “Non-binding best practice examples to demonstrate additionality for SSC project activities” with any applicable additionality tools. For microscale projects « guidelines for demonstrating additionality of microscale project activities» shall be referred.	/1/, /2/, /11/	DR	PP has used the “Tool for demonstration and assessment of additonality” version 07.0.0 which is in line with the methodology.	O.K.	O.K.
7 b) Have the regulatory requirements correctly been taken into account to evaluate the project activity and the alternatives? Is sufficient evidence provided to support the relevance of the arguments made?	/1/, /2/, /11/	DR	Please refer to CL 08	CL 08	O.K.
7 c) What is the project additionality mainly based on (Investment analysis or barrier analysis)?	/1/, /2/, /21/	DR	Project additionality is based mainly on investment analysis as per tool used.	O.K.	O.K.
7.1 Prior consideration of the CDM (VVS Section 7.12.9)					
7.1.1 Is there documented evidence provided by the project participants on how and when the	/1/, /2/	DR	CL 13 a) PP shall clarify the decision date to	CL 13	O.K.

decision to proceed with the project activity was taken?			proceed with the project activity. PP is requested to provide evidence. b) Starting date addressed in the GSP PDD is not consistent with the on-site observations. PP shall clarify the starting date of the project activity according the “Glossary of CDM terms”. PP shall submit evidence		
7.1.2 Is the starting date of the project activity, reported in the PDD, in accordance with the “Glossary of CDM terms” and VVS (§106)?	/1/, /2/, /9/	DR	Please refer CL 13	CL 13	O.K.
7.1.3 Is the date stated in the provided evidence consistent with other available real action evidence (e.g. dates of construction, purchase orders for equipment)?	/1/, /2/, /9/	DR	Please refer CL 13	CL 13	O.K.
7.1.4 If the project was not published and the starting date is on or after 2nd August 2008, was it possible to receive from UNFCCC secretariat and DNA a written confirmation that PPs previously informed the above entities on commencement of the project activity and of their intention to seek CDM status?	/1/, /2/, /9/	DR	PDD was published for GSP on 17/03/2012, which is before that the starting date addressed it in the GSP PDD. Please refer to CL 13	CL 13	O.K.
7.1.5 For the project activities with a starting date before 2nd August 2008 and before the actual publication, was there enough evidence presented to prove that PPs were previously aware of CDM?	/1/, /2/, /9/	DR	N/A	O.K.	O.K.

7.1.6 For the project activities with a starting date before 2nd August 2008 and before the actual publication, was there enough evidence presented to prove that CDM benefits have been a decisive factor in the decision to proceed with the project activity?	/1/, /2/, /9/	DR	NA	O.K.	O.K.
7.1.7 Does the individual or body that took the decision to proceed with the project activity have/had the authority to do so?	/1/, /2/, /9/	DR I	Yes, As per on site visit, the project activity will take place within Calidra de Occidente S.A. de C.V. facilities, so they have the authorization to develop the project activity	O.K.	O.K.
7.1.8 For the project activities with a starting date before 2nd August 2008 and before the actual publication, was there enough evidence presented to prove that PPs were taking continuing and real actions to secure CDM status for the project in parallel with its implementation?	/1/, /2/, /9/	DR	N/A	O.K.	O.K.
7.1.7 In case there is a significant gap between the start date of the project activity and the commencement of validation, how was it possible for the project participant to commit funds to the project in advance of receiving a positive validation opinion?	/1/, /2/, /9/	DR	Please refer to CL 13	CL 13	O.K.
7.1.8 How has the starting date of the project activity been determined? What are the dates of the first contracts for the project activity? When was the first construction activity?	/1/, /2/, /9/	DR	Please refer to CL 13	CL 13	O.K.

7.1.9 Is the stated expected operational lifetime of the project activity reasonable?	/1/, /2/, /16/, /30/	DR	CAR 14 a) PP shall submit evidence of the operational lifetime for the project activity b) As project activity consists on a retrofit of a lime kiln and the construction of a new lime kiln for utilizing alternative fuels, PP is requested to follow the tool for the remaining lifetime of the equipment and shall be addressed in the PDD	CAR 14	O.K.
7.1.10 Is the crediting period start date, the type (renewable/fixed) and the length of the crediting period clearly defined and reasonable?	/1/, /2/	DR	PP has selected a renewable crediting period for 7 years, starting on 01/01/2014.	O.K.	O.K.
7.2 Identification of alternatives(VVS Section 7.12.10)					
7.2.1 Does the PDD identify and list credible alternatives to the CDM project activity in order to determine the most realistic baseline scenario, unless selected approved methodology prescribes/identifies the baseline scenario and no further analysis is required?	/1/, /2/, /10/	DR	The methodology AM0036 version 4.0.0 identifies the credible alternatives to determine the most realistic baseline scenario, which are stated in section B.4 of the GSP PDD.	O.K.	O.K.
7.2.2 Does the list of alternatives include as one of the options that the project activity is undertaken without being registered as a CDM project activity?	/1/, /2/, /10/	DR	Yes, the alternatives H1 and B7 are stated in section B.4 of the GSP PDD.	O.K.	O.K.
7.2.3 Does the list contain all realistic/credible alternatives that the DOE, on the basis of its local and sectoral knowledge, considers to be viable means of supplying the outputs or services that are to be supplied by the project activity?	/1/, /2/, /10/	DR	The GSP PDD applied the methodology procedure to identify the baseline scenario. All the alternative scenarios were discussed and no reasonable baseline scenarios have been excluded.	O.K.	O.K.
7.2.4 Is the exclusion of the alternatives for legal reasons justified?	/1/, /2/, /10/	DR	No alternatives were excluded due to legal reasons as per on site visit observations.	O.K.	O.K.

7.3 Investment Analysis(VVS Section 7.12.11)					
<p>7.3.1 Are all sources of revenues (including savings) have been considered in the PDD and all calculations?</p> <p>Refer «guidelines on the assessment of investment analysis»</p>	/1/, /2/, /21/, /65/	DR	<p>CAR 15</p> <p>It should be clarified with supporting evidence for the following financial parameters:</p> <ul style="list-style-type: none"> a) Electricity consumption evidence b) Diesel consumption evidence c) Manufacturer evidence d) Biomass price e) Pet-Coke price f) Distance between Calidra de Occidente plant and biomass residues origin g) Historical CaO production h) Historical pet-coke consumption for the plant and Maerz kiln to be retrofitted i) Pet coke analysis certificate j) Tax rate k) Operating days l) Simple translation to English from “Report of heat value of the agave residues sample 1” & “Report of heat value of the agave residues sample 2” 	CAR-15	O.K.

7.3.2 Is the type of investment analysis selected correctly in the PDD? Is the choice of benchmark analysis, investment comparison or simple cost analysis correct and justified?	/1/, /2/, /21/, /65/	DR	CAR 16 <ul style="list-style-type: none"> a) Input values shall be addressed in the PDD b) If benchmark is used from the default value from the EB 62 Annex 5, IRR shall be calculated post-tax c) O&M costs are stated as 2% of the investment cost. PP should clarify if salaries for workers will be added in the financial model. d) PP is requested to include the revenue from pet-coke saving e) No fair (residual) value was considered at the end of year 20 as a positive cash flow f) As per GSP PDD, it is not clear whether PP states that the alternative action does not require investment. PP is requested to clarify it 	CAR 16	O.K.
7.3.3 Is the selected financial indicator chosen and applied correctly? Is it on equity/project basis? Before/after tax? Is the financial indicator in correspondence with the benchmark?	/1/, /2/, /21/, /65/	DR	Please refer to CAR 16	CAR 16	O.K.
7.3.4 Is the guidance on IRR calculation and assessment correctly applied?	/1/, /2/, /21/, 65/	DR	Please refer to CAR 16	CAR 16	O.K.
7.3.5 In case project participants use values from Feasibility Study Reports (FSR) is it possible to verify that the period between the FSR date and investment decision was reasonably short and FSR values did not change materially?	/20/, /21/	DR	Please refer to CAR 16	CAR 16	O.K.
7.3.6 Are all the values consistent between FSR and PDD and are inconsistencies properly justified?	/20/, /21/	DR	Please refer to CAR 16	CAR 16	O.K.

7.3.7 Were all the values from FSR applicable and valid at the time of the investment decision?	/20/, /21/	DR	Please refer to CAR 16	CAR 16	O.K.
7.3.8 Is it reasonable to assume that no investment would be made at a rate of return lower than the benchmark by, for example, assessing previous investment decisions by the project participants or some verifiable circumstances that have led to a change in the benchmark?	/20/, /21/	DR	Please refer to CAR 16	CAR 16	O.K.
7.3.9 Is the Investment Analysis prepared in compliance with the latest version of the “Guidance on the Assessment of Investment Analysis” as provided by the CDM EB?	/1/, /2/, /20/, /21/, /65/	DR	Yes, the Investment Analysis was prepared as per EB 62 Annex 5. Please refer to CAR 16	CAR 16	O.K.
7.3.10 Do the project include all the data sources used (input & output / loss & profit) and list all the projects that have been used for cross-checking in accordance with VVS paragraph 123: a. Explain, how was the total investment cost accepted, and if it was available at the time of decision, b. Does the income tax calculation take depreciation into account? Is the depreciation year in accordance with normal accounting practice in the host country? c. Has salvage value been taken into account? Is working capital returned in the last year of operation? d. How are the PLF of the project assessed? e. How are output price assessed? f. How are O&M cost assessed?	/1/, /2/, /20/, /21/, /65/	DR	Please refer to CAR 16	CAR 16	O.K.

7.3.11 Sensitivity analysis: Have the key parameters contributing to more than 20% of the revenue/costs during operating or implementation been identified? Has possible correlation between the parameters been considered? Is the range of variations (10% in default) is reasonable in the project context? Have the key parameters been vary to reach or cross the benchmark and have the likelihood of this to happen been justified?	//1/, /2/, /20/, /21/, /65/	DR	CAR 17 a) Values in sensitivity analysis were not easily verified because of its low value. PP is requested to apply vertical sensitivity analysis. b) There are project costs that are more than 20% of the total project costs. PP is requested to address these costs in the sensitivity analysis.	CAR 17	O.K.
7.4 Barrier analysis(VVS Section 7.12.12)					
7.4.1 Are there any issues addressed in the barrier analysis that have a clear impact on the financial viability of the project activity and that shall be assessed by an investment analysis? Refer «guidelines for objective demonstration and assessment of barriers»	/1/, /2/, /20/, /21/, /65/	DR	An investment analysis was performed for assessing the barrier analysis for the project activity.	O.K.	O.K.
7.4.2 Do the listed barriers exist and is their existence substantiated?	1/, /2/, /20/, /21/, /65/	DR	Yes, the existence of barriers has been substantiated.	O.K.	O.K.
7.4.3 Would any of the identified barriers prevent the implementation of the project activity but not equally prevent the implementation of the possible alternatives, in particular the implementation of the identified baseline scenario?	1/, /2/, /20/, /21/, /65/	DR	No barriers would prevent the implementation of at least one of the alternatives.	O.K.	O.K.
7.5 Common practice analysis(VVS Section 7.12.13)					
7.5.1 If the PPs claim in the PDD that CDM project activity is not common practice, is it justified? PDD provide similar projects within the region with similar measure and energy source/fuel and feedstock with comparable quality/properties/application areas as the proposed project activity?	/1/, /2/, /61/	DR	CAR 18 a) PP should remove the “first of its kind” if it is not going to be used. b) PP shall provide evidence for conducting common practice as per Guidelines on Common practice, EB 69 annex 8 version 02.0.	CAR 18	O.K.

7.5.2: Step 1: How is the assessment done on capacity output within the applicable range, is it within (+/- 50%) of the proposed projects	/1/, /2/, /61/	DR	The installed capacity of Calidra de Occidente S. A. de C. V. CaO plant is 1,180 tpd, which means that the applicable output range for this analysis goes from 590 tpd to 1,770 tpd.	O.K.	O.K.
7.5.3: Step 2: How have similar projects (both CDM and non-CDM) projects been identified, confirm data source and information: (a) The projects are located in the applicable geographical area (b) The projects apply the same measure as the proposed project activity; (c) The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity; (d) The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g. clinker) as the proposed project plant; (e) The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1; The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed projectActivity.	/1/, /2/, /61/	DR	g) Mexico is the host country where project activity is located and validation team confirms that it is valid to take into account the host country as geographical scope for the common practice according to the Guideline for common practice v.2.0 /61/. h) As per information obtained from the National Association of Lime Producers (ANFACAL), officially recognized organism in Mexico, the number of plants with an installed capacity within the applicable output range is 8 i) According to the National Association of Lime Producers (ANFACAL) /43/ and /44/, not even one plant has officially recognized the use of biomass residues as energy source and there are not official registers of the use of these residues as fuel for kilns in the production of lime or CaO. At national level, the only fuels used in regular basis are fuel oil, petroleum coke and natural gas. j) All of the latest plants use fossil fuels as it is common practice in the country, none of them has officially recognized the use of biomass	O.K.	O.K.

			<p>residues as alternative fuel and all of them produce goods with comparable quality as the proposed project plant.</p> <p>k) The installed capacity of Calidra de Occidente S. A. de C. V. CaO plant is 1,180 tpd, which means that the applicable output range for this analysis goes from 590 tpd to 1,770 tpd.</p> <p>l) Projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholders consultation or before the start date of proposed whichever is the earlier. The current project activity was published in for global stakeholder consultation on 17/03/2012 which is the earlier date.</p>		
<p>7.5.4: Step 3:</p> <p>Within the projects identified in Step 2, how many have been identified : are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Note N_{all}.</p>	/1/, /2/, /61/	DR	<p>According to “Tool for demonstration and assessment of additionality” version 07 /11/, CDM project activities (registered project activities and project activities which have been published on the UNFCCC website for global stakeholder consultation as part of the validation process) are not to be included in common practice analysis. According to the National Association of Lime Producers (ANFACAL) /42/ and /43/, officially recognized organism in Mexico, not even one plant has officially recognized the use of biomass residues as energy source and there are not official registers of the use of these residues as fuel for kilns in the production of lime or CaO.</p> <p>Hence $N_{all} = 0$</p>	O.K.	O.K.

7.5.5: Step 4: Within similar projects identified in Step 3; has it been identified those that apply technologies that are different to the technology applied in the proposed project activity. Note N_{diff} .	/1/, /2/, /61/	DR	As per information obtained from the National Association of Lime Producers (ANFACAL) /43/ and /44/, officially recognized organism in Mexico, the number of plants with an installed capacity within the applicable output range is 8. None of those plants are undergoing the registration process as CDM project activities, all of them use fossil fuels as it is common practice in the country, none of them has officially recognized the use of biomass residues as alternative fuel and all of them produce goods with comparable quality as the proposed project plant. Hence $N_{diff} = 0$	O.K.	O.K.
7.5.6: Step 5: Assess the calculation of $F = 1 - N_{diff}/N_{all}$ and confirm if it is acceptable.	/1/, /2/, /61/	DR	As no similar projects were identified in the host country; The validation team confirms that the calculation of $F = 1 - N_{diff}/N_{all}$ is considered appropriate.	O.K.	O.K.
7.5.7: Conclusion: Is the assessment of common practice completed with evaluation of N_{all} , N_{diff} and F and concluded that the proposed project activity is not a common practice: $F < 0.2$, and $N_{all} - N_{diff} < 3$	/1/, /2/, /61/	DR	Based on the review of the the current country practices and after review of other registered projects, and comparing with the size a quantity of installations present in Mexico. Then the share of similar projects (F) is calculated as $F = 1 - N_{diff}/N_{all}$ As stated above, $F = 1 - 0/0$ is undefined; and $N_{all} - N_{diff}$ is equal to zero Finally F value is undefined, but $N_{all} - N_{diff}$ value is zero lower than 3. The validation team confirms that the actual project activity is not a common practice in the host country.	O.K.	O.K.
7.6 First-of-its-kind (VVS Section 7.12.13)					
If the PPs claim in the PDD that CDM project activity	/1/, /2/,	DR	The Project it's not "first of its kind".	O.K.	O.K.

<p>is the “first of its kind”, is it justified?</p> <p>a. <i>Applicable geographical area covering entire host country unless justification on essential distinction between the identified specific geographical area and rest of the Project is the first in the applicable host technologies that are implemented by any other project, which are able to deliver the same output and have started commercial operation country has been distinctly justified,</i></p> <p>b. <i>geographical area that applies in the applicable geographical area before the CDM-PDD is published for GSC or before the start date of the proposed project activity, whichever is earlier,</i></p> <p>c. <i>The project implements one or more of the measures (refer definition in «guideline on additionality of first-of-its-kind activities»),</i></p> <p>d. <i>The project participants selects crediting period of a maximum of 10 years with no option of renewal.</i></p>	/61/				
8. Conclusion					
8.1 What is the conclusion with regard to the additionality of the project activity.	/1/, /2/, /61/	DR		O.K.	O.K.
9. Monitoring plan (VVS Section 7.12.14)					

<p>9.1 Are all parameters required by the selected approved methodology or tool identified and listed in the PDD? Note: All parameters indicated in the methodology and applicable to the project must be listed in the PDD, omissions due to non-applicability be justified.</p>	/1/, /2/, /10/	DR	<p>CAR 19</p> <ul style="list-style-type: none"> a) New data management description shall be addressed in the PDD b) PP shall indicate the training for workers involved in the CDM project c) Standards from local regulation or manufacturer for monitoring shall be addressed d) Emergencies shall be addressed in the PDD e) PP shall clarify why the selected data was taken from 2008, 2009, 2010 f) PP shall clarify the plant operational time and evidence related to historical production shall be provided to the DOE. g) PP is requested to address calibration frequency, monitoring equipment accuracy and localization as per section B.7.1 of the Guideline for completing CDM PDD 	CAR 19	O.K.
<p>9.2 Are the parameters in the PDD clearly described and that the measurement method clearly stated for each value to be monitored and deemed appropriate:</p>	/1/, /2/, /10/	DR	<p>Yes, the all the parameters have been correctly stated in the section B.7.1 of the PDD. However, please refer the CAR 19</p>	CAR 19	O.K.
<p>9.2.1 Monitored parameter Title: $EF_{FF,CO_2,y}$ Indication: CO₂ emission factor of fuel type i used in power unit m in year y Units: tCO₂/TJ, tCO₂/m³ Value: 74,800 Kg CO₂/TJ as per least carbon intensive fuel type (Diesel).</p>	/1/, /2/, /10/	DR	<p>The upper value of the effective CO₂ emission factor for combustion has been used as provided in table 1.4 of Chapter1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html/62/.</p> <p>$EF_{FF,CO_2,y}$, as a conservative approach, the least carbon intensive fuel type should be</p>	O.K.	O.K.

			used among the fossil fuels types used at the project site during the most recent 3 years prior to the implementation of the project activity and the fossil fuels used in the equipment at the project site due the year y.		
9.2.2 Monitored parameter Title: $HG_{PJ, total, y}$ Indication: Total heat generated in all heat generation equipment at the project site, using both biomass residues and fossil fuels, during the year y. Units: GJ/yr Value: 1,430,164	/1/, /2/, /10/	DR	This parameter will be measured through the management system Microsoft Dynamics AX 2009, which will allow them to have a more accurate and strict control of the data gathering and monitoring.	O.K.	O.K.
9.2.3 Monitored parameter Title: $BF_{k, y}$ Indication: Total heat generated in all heat generation equipment at the project site, using both biomass residues and fossil fuels, during the year y. Units: Tons of dry matter Value: Forestry residues 3,320 tons and 42,907 tons for Agricultural residues.	/1/, /2/, /10/	DR	This parameter will be measured through weight or volume meters and these shall be recalibrated according to manufacturer specifications, but at least once each 3 years, as per correctly stated in the monitoring plan.	O.K.	O.K.
9.2.4 Monitored parameter Title: Moisture content of the biomass residues. Indication: Moisture content of each biomass residue type k. Units: % Water content. Value: Forestry residues 40%-60% and 30%-50% for Agricultural residues.	/1/, /2/, /10/	DR	Moisture content of each biomass residue type k. This parameter will be monitored for each batch of biomass of homogeneous quality. As per correctly stated in the monitoring plan and the methodology AM0036 (version 4.0.0).	O.K.	O.K.
9.2.5 Monitored parameter Title: $FC_{i, y}$	/1/, /2/, /10/	DR	Quantity of fossil fuel type i fired in all heat generation equipment at the project site during the year y. This parameter will be	O.K.	O.K.

<p>Indication: Quantity of fossil fuel type <i>i</i> fired in all heat generation equipment at the project site during the year <i>y</i>. Units: Mass or volume unit. Value: 13,835 tons of petcoke, 155 tons of fuel oil and 6 tons of diesel.</p>			<p>monitored through the fossil fuels comprehended in this parameter are the ones of the historical data. Instruments will be recalibrated at appropriate intervals according to manufacturer specifications, but at least once in 3 years. Furthermore, as per correctly addressed in the approved methodology AM0036 (version 4.0.0) cross-check the measurements with an annual energy balance that is based on purchased quantities and stock changes shall be performed.</p>		
<p>9.2.6 Monitored parameter Title: $FC_{i,y}$ Indication: Quantity of fuel type <i>i</i> combusted during the year <i>y</i> attributable to the project activity. Units: Mass or volume unit. Value: 18 tons of diesel.</p>	/1/, /2/, /10/	DR	<p>Quantity of fuel type <i>i</i> combusted during the year <i>y</i> attributable to the project activity. This parameter will be monitored through measurements of mass of volume, using scales for solid fuels and flow meter for fluids.</p>	O.K.	O.K.
<p>9.2.7 Monitored parameter Title: $EC_{PJ,y}$ Indication: On-site electricity consumption attributable to the project activity during the year <i>y</i>. Units: MWh. Value: 5,305</p>	/1/, /2/, /10/	DR	<p>On-site electricity consumption attributable to the project activity during the year <i>y</i>. This parameter will be monitored through electricity meters and these will be recalibrated at appropriate intervals according to manufacturer specifications, but at least once in 3 years. Furthermore, as per correctly addressed in the approved methodology AM0036 (version 4.0.0) cross-check measurement results with invoices for purchased electricity if available is required.</p>	O.K.	O.K.
<p>9.2.8 Monitored parameter Title: NCV_i</p>	/1/, /2/, /10/, /62/	DR	<p>As per methodology the PP has stated in the monitoring plan that during the monitoring period either measurement in reputed</p>	O.K.	O.K.

Indication: Net calorific value of fossil fuel type <i>i</i> . Units: GJ/mass or volume unit. Value: 35.4 GJ/Ton (8,470 Kcal/kg) for petcoke, 40.1 GJ/Ton (9,589 Kcal/kg) for fuel oil, 41.9 GJ/Ton (10,007 Kcal/kg) for diesel.			laboratories will be conducted or reliable local or national data or IPCC default net calorific values will be used if they are deemed to reasonably represent local circumstances.		
9.2.9 Monitored parameter Title: NCV _k Indication: Net calorific value of biomass residue type k. Units: GJ/ton of dry matter Value: Forestry residues: 4,471 Kcal/Kg and Agricultural residues: 3,805 Kcal/Kg	/1/, /2/, /10/, /62/	DR	Net calorific value of biomass residue type k. Measurements shall be carried out at reputed laboratories and according to relevant international standards, this shall be performed at least each six months as per correctly stated in the methodology and the section B.7.2 of the sampling plan.	O.K.	O.K.
9.2.10 Monitored parameter Title: - Indication: Quantity of biomass residues of type k or m that are utilized (e.g., for energy generation or as feedstock) in the defined geographical region. Units: Tons Value: -	/1/, /2/, /10/	DR	Quantity of biomass residues of type k or m that are utilized (e.g., for energy generation or as feedstock) in the defined geographical region. As per addressed the methodology Monitoring of this parameter is applicable if approach L ₂ is used to rule out leakage or if approach L ₄ is used in combination with approach L ₂ to rule out leakage for the substituted biomass residue type m.	O.K.	O.K.
9.2.11 Monitored parameter Title: - Indication: Quantity of available biomass residues of type k or m in the region. Units: Tons Value: -	/1/, /2/, /10/	DR	Quantity of available biomass residues of type k or m in the region. As per addressed the methodology Monitoring of this parameter is applicable if approach L ₂ is used to rule out leakage or if approach L ₄ is used in combination with approach L ₂ to rule out leakage for the substituted biomass residue type m.	O.K.	O.K.
9.2.12 Monitored parameter Title: NCV _{n,y} Indication: Net calorific value of biomass	/1/, /2/, /10/	DR	Net calorific value of biomass residues of category n in year y. Measurements shall be carried out at reputed laboratories and	O.K.	O.K.

residues of category n in year y. Units: GJ/tonnes on dry-basis Value: Forestry residues: 4,471 Kcal/Kg and Agricultural residues: 3,805 Kcal/Kg			according to relevant international standards, this shall be performed at least each six months as per correctly stated in the methodology and the section B.7.2 of the sampling plan.		
9.2.13 Monitored parameter Title: $D_{f,m}$ Indication: Return trip road distance between the origin and destination of freight transportation activity f in monitoring period m. Units: Km Value: 150	/1/, /2/, /10/, /17/	DR	Return trip road distance between the origin and destination of freight transportation activity f in monitoring period m. Data is Determined once for each freight transportation activity f for a reference trip using the vehicle odometer or any other appropriate sources (e.g. on-line sources). As per correctly stated in the "Tool Project and leakage emissions from road transportation of freight, This parameter will be monitored through Records by project participants or records by truck operators.	O.K.	O.K.
9.2.14 Monitored parameter Title: $FR_{f,m}$ Indication: Total mass of freight transported in freight transportation activity f in monitoring period m. Units: Tons Value: 42,226	/1/, /2/, /10/, /17/	DR	Total mass of freight transported in freight transportation activity f in monitoring period m. As per correctly stated in the "Tool Project and leakage emissions from road transportation of freight, This parameter will be monitored through Records by project participants or records by truck operators.	O.K.	O.K.
8.2 Does the monitoring plan record data in the original form as generated, providing QA/QC procedures to be used on the measurement method?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.

9.4	Is the measurement equipment for each parameter described and deemed appropriate? Are the locations of all measurement equipment clearly identified and consistently described, incl. process flow-charts contained in the PDD?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.
9.5	Is the measurement accuracy addressed and deemed appropriate?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.
9.6	Are procedures in place on how to deal with erroneous measurements and are the corrective actions identified?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.
9.7	Is the frequency of measurement identified and deemed appropriate?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.
9.8	Is the monitoring plan documented according to the approved methodology and in a complete and transparent manner?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.
9.9	Are the sampling, measurement methods and procedures defined?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.
9.10	Are procedures identified for maintenance of monitoring equipment and installations?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.
9.11	Are the equipment calibration intervals identified and justified? Is the calibration conducted by accredited person or intuition?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.
9.12	Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.
9.13	Are the monitoring arrangements described in the monitoring plan feasible within the project design?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.

9.14 Are the means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, sufficient to ensure that the emission reductions achieved by / resulting from the project activity can be reported ex post and verified?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.
8.15 Do the PPs make provisions for personnel training needs?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.
9.16 Is the authority and responsibility of overall project management clearly described?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.
9.17 Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.
9.18 Are procedures identified for review of reported results/data?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.
9.19 Does responsibilities and institutional arrangements for data collection and archiving in place? Is the data archiving period for this project activity stated in the PDD and appropriate?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.
9.20 Is the monitoring parameters for all project emissions captured?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.
9.21 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?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.
9.22 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?	/1/, /2/, /10/	DR	Please refer to CAR 19	CAR 19	O.K.

9.23 Is operational and management structure in place to implement the monitoring plan?	/1/, /2/, /10/	DR	Yes, the operational and management structure have been correctly identified and addressed in the section B.7.2 “Description of the monitoring plan”.	O.K.	O.K.
9.2 Monitoring of the leakage					
9.2.1 Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	/1/, /2/, /10/	DR	Leakage has been stated as zero Please refer to section 5.6	O.K.	O.K.
9.2.2 Is the choice of project leakage indicators made according to selected methodology in a reasonable and conservative manner?	/1/, /2/, /10/	DR	Leakage has been stated as zero Please refer to section 5.6	O.K.	O.K.
9.2.3 Is the measurement method clearly stated and deemed appropriate for each leakage value?	/1/, /2/, /10/	DR	Leakage has been stated as zero Please refer to section 5.6	O.K.	O.K.
10. Sustainable development(VVS Section 7.5)					
10.1 Does the LoA from the Host country DNA contain the confirmation that the proposed CDM project activity contributes to the sustainable development of the host Party?	/1/, /2/, /3/	DR	Please refer to CAR 01	CAR 01	O.K.
10.2 If PDD indicates any additional environmental benefits of the project, other than GHG emission reductions, were those benefits properly substantiated?	/1/, /2/, /3/	DR	No other environmental benefits from the GHG reductions were identified in the GSP PDD.	O.K.	O.K.
11. Stakeholders’ consultation and comments (VVS Section 7.5 & 7.14)					
11.1 Were the stakeholders identified in appropriate and complete manner?	/1/, /2/, /46/, /47/, /48/, /49/	DR	Yes, the stakeholder consultation is stated in section E of the GSP PDD	O.K.	O.K.
11.2 Are the identified stakeholders plausible?	/1/, /2/, /46/, /47/, /48/, /49/	DR	As per on site visit, the stakeholders were identified plausible. Also PP has submitted to the DOE lists of participation and surveys as evidence.	O.K.	O.K.

11.3 Does PDD describe the means being used to invite local stakeholder's comments?	/1/, /2/, /46/, /47/, /48/, /49/	DR	CAR 20 a) Means of invitation shall be provided to the DOE. b) The presentation given to stakeholders shall be provided to the DOE.	CAR 20	O.K.
11.4 Were those means appropriate?	/1/, /2/, /46/, /47/, /48/, /49/	DR	Please refer to CAR 20	CAR 20	O.K.
11.5 Was the project presented to the stakeholders in unbiased manner?	/1/, /2/, /46/, /47/, /48/, /49/	DR	Please refer to CAR 20	CAR 20	O.K.
11.6 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?	/1/, /2/, /46/, /47/, /48/, /49/	DR	No regulation applied to the project activity requires to perform a stakeholder consultation.	O.K.	O.K.
11.7 Is a summary of the stakeholder comments provided in the PDD?	/1/, /2/, /46/, /47/, /48/, /49/	DR	Yes, comments from stakeholders are summarized in section E.2 of the PDD.	O.K.	O.K.
11.8 Has due account of any stakeholder comments been taken by PPs and reflected in the PDD?	/1/, /2/, /46/, /47/, /48/, /49/	DR	Yes, the comments collected.	O.K.	O.K.
12. Environmental impacts (VVS Section 7.13)					
12.1 Is the documentation supplied by the PPs regarding environmental impacts relevant and accurately reflected in the PDD?	/1/, /2/, /51/	DR	Yes, PP has submitted to the DOE the environmental impact assessment and the resolution given from the environmental authority.	O.K.	O.K.

12.2 Is an environmental impact assessment (EIA) required for the CDM project activity?	/1/, /2/, /51/	DR	<p>Yes, Environmental Impact Assessment is required for the CDM project activity by the national regulation “Ley General de Equilibrio Ecológico y Protección Ambiental (LGEEPA)”. PP has submitted the Environmental Impact Assessment made on November 2011. Nevertheless,</p> <p>CAR 21 The EIA referred in the Unique Environmental License is not consistent with the EIA submitted to the DOE. PP is requested to submit the EIA referred in the Unique Environmental License</p> <p>CL 22 The Unique Environmental License establishes that CALIDRA DE OCCIDENTE S.A. de C.V has no authorization for utilizing alternative fuels different from the stated in the NOM-085-SEMARNAT-1994. As biomass residues are not stated on this regulation, PP is requested to clarify which authorization or regulation allows the lime plant to burn biomass residues.</p>	CAR 21 CL 22	O.K.
12.3 In case an EIA is required, has the EIA has been approved by local authorities and is the outcome accurately reflected in the PDD?	/1/, /2/, /51/	DR	<p>The Environmental Impact Assessment was approved by the National Environmental Authority (SEMARNAT) on 17/01/2012 and PP has submitted the Unique Environmental License.</p> <p>Please refer to CAR 21</p>	CAR 21	O.K.
12.4 Does the PDD include a brief description of the environmental effects of the project, including transboundary?	/1/, /2/, /51/	DR	Yes, the environmental effects including those on transboundary are stated in section D.1 of the PDD.	O.K.	O.K.

12.5 Are those effects properly addressed in the design of the project activity?	/1/, /2/, /51/	DR	Yes, those effects are properly addressed in the design of the project activity	O.K.	O.K.
12.6 Does the project comply with environmental legislation in the host country?	/1/, /2/, /51/	DR	Yes, project activity shows compliance with environmental legislation in the host country. Please refer to CL 22	CL 22	O.K.

Table 2: List of Requests for Corrective Action (CAR) and Clarification (CL)

Validation / Verification Standard

(25) The DOE shall raise a corrective action request (CAR) if one of the following occurs:

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

(26) The DOE shall raise a clarification request (CL) if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

The wording of CAR/CL shall clearly address nonconformity or seek clarification, and avoid instructive / consultative language in order to prevent actual or perceived consultancy.

No.	CAR/CL	Observation (CAR/CL)	Reference	Summary of project owner response	Validation team conclusion
1	X	CAR 01 PP shall provide the LoA from Mexico's DNA	1.1, 1.2,1.3,1.4, 1.5,1.7, 1.8,2.2,2.3,2.4	The LoA from Mexico's DNA is delivered through the file P115_VAL_175.	PP has submitted the LOA with number 301 /2012 from Mexico's DNA fulfilling the requirements from PS paragraphs 70 – 71. This CAR is CLOSED
2	X	CAR 02 PP shall submit the Modalities of Communications Letter	1.6	The MoC is delivered through the file P115_VAL_159. Further request from DOE: As per "Procedures for Modalities of Communication between Project participants and the Executive Board the Moc shall be in line with the following paragraph : 9 Signature is defined as an agreed means of authentication of an MoC statement by a project participant, or a given communication from a focal point entity, as the context requires. It may be either an authenticated handwritten signature, accompanied with a company seal or stamp if	The MoC has been submitted to the DOE, as per latest version available F-CDM-MOC in a complete manner. This CAR is CLOSED

				<p>appropriate, or a cryptographic electronic signature enrolled in the CDM Information System. Written confirmation obtained by the PP's stating the authorization, specimen signatures and personal details, employment status is valid and accurate" would be acceptable.</p> <p><u>Further response from PP:</u> Written confirmation and respective IDs for the authorized representatives of the project participants are delivered to the DOE through the following files:</p> <p>P115_VAL_309: MOC in VVS format. P115_VAL_319: Letter from Calidra de Occidente for the delivery of the MOC. P115_VAL_320: ID copy from the authorized representative of Calidra de Occidente. P115_VAL_321: Letter from Carbon Solutions de México for the delivery of the MOC. P115_VAL_322: ID copy from the authorized representative of Carbon Solutions de México.</p> <p><u>Further request from DOE 2:</u></p>	
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					<p>The PP is requested to provide the format F-CDM-MOC in a complete manner, including the table history of document.</p> <p><u>Further response from PP:</u> The complete MOC (including the history of the document) is delivered to the DOE through the file P115_VAL_323.</p> <p><u>Further request from DOE 3:</u> Please tick off Mr or Ms for the representative from “Carbon Solutions de México S. A. de C. V.” in ANNEX 1 of MoC.</p> <p><u>Further response from PP:</u> The corrected MOC is delivered to the DOE through the file P115_VAL_342.</p>	
3	X		<p>CAR 03 “Calidra S.A” in section A.4.3 is not consistent with the Annex 1. PP is requested to address the correct name of the company within the whole document</p>	2.1	<p>The name has been corrected in the PDD version 2.0 (P115_VAL_167).</p>	<p>Project participants are consistent between section A.4 (former A.4.3) and Annex 1. This CAR is CLOSED</p>
4		X	<p>CL 04 PP shall clarify if the template for CDM PDD will be updated according to the latest guideline approved by the EB 66. Otherwise, PP should check the timeline for the request of</p>	3.1	<p>The PP has decided to use the latest template available under the VVS track.</p>	<p>PP uses the most updated version of the PDD under the VVS track. This CL is CLOSED</p>

			registration.			
5	X		CAR 05 a) The format dates stated in the PDD shall be presented as per Guidelines form for completing PDD (DD/MM/YYYY), thus section A.1 shall be corrected accordingly, as well other PDD sections where dates are reference. b) The geographic coordinates shall be presented as per UNFCCC format, in the decimal format with+/- sign and should have a precision of 4 (four) decimals.	3.2	The format to present the date and coordinates has been corrected in the PDD version 2.0 (P115_VAL_167).	Format dates and geographic coordinates were corrected in the PDD. This CAR is CLOSED
6	X		CAR 06 a) Basic information about the kiln production capacity, biomass disposal should be provided and addressed in the PDD. b) PP is requested to provide a plant layout in section A.4.1.4, indicating which are the existing facilities, which are the new facilities before the project implementation c) PP is requested to provide and address a process flow diagram in the PDD d) PP should clarify the range on the fuel substitution	4.1,4.2,4.3,4.4	The requested information has been included in the section A.3 of the PDD under the VVS template, equivalent to the previous A.4.1.4 of the VVS template. The plant layout and design specifications for the biomass residues warehouse requested have not been included in latest section but have been delivered to the DOE through the files: P115_VAL_094 and P115_VAL_224. Further request from DOE:	The information regarding the project description was assessed and it is concluded that the information is complete and accurate This CAR is CLOSED

			<p>e) PP is requested to quantify the number of employees expected for the operation of the project activity</p> <p>f) Biomass storage design should be provided to the DOE.</p>	<p>a) PP is requested to describe the quicklime plant at the absence of project activity including operation date, installed capacity in tons quicklime per year, raw materials, main burner and so on (P115_VAL_229).</p> <p>b) Employees have been addressed in the financial model but it has not been addressed in the PDD. PP is requested to address it (P115_VAL_238).</p> <p><u>Further response from PP:</u> Further details about Calidra de Occidente CaO plant have been added in section A.3 of the PDD version 3.0 as requested by the <i>Guidelines for completing the project design document form for small-scale CDM project activities version 1.0</i>. The evidence of this information is provided to the DOE through the file P115_VAL_237.</p> <p>The information about the employees to be hired for the project activity has been added in section B.7.3 “Other</p>	
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					elements of monitoring plan".	
7		X	CL 07 a) PP should clarify if the rotary dryer consist on electrical heating or fossil fuel heating b) PP shall clarify the major technical specifications (e.g. Kiln length, radius, operating temperature, production capacity) c) PP should clarify if the technology is produced domestically or imported. Also, PP should specify the origin. d) In section A.4.3, PP shall clarify if the agave bagasse is on anaerobic or aerobic conditions. PP shall states the baseline scenario e) PP shall clarify if the project description stated in the GSP PDD section A.4.3 is in line with the monitoring plan. f) PP shall clarify which equipment is affected/retrofitted by the project activity	4.1	a) The rotatory dryer is expected to use fossil fuels or the same biomass used for the project activity. Under any of the latest scenarios the fossil fuels consumption will be monitored during the crediting period to account it as project emissions. b) The Maerz kilns specs sheet is provided to the DOE through the file P115_VAL_178. c) The technology is expected to be mostly imported, e.g. the lances feeding system for the retrofitting of the 400 tpd kiln will be imported from Switzerland. Other equipments like the silo for biomass is expected to be build in Mexico. d) The agave bagasse will be stored under aerobic conditions. e) The monitoring plan of section B.7 is in accordance with the project's description of	a) PP has clarified that drying equipment may use fossil fuels or the same biomass. In any case, it has been included in the project boundary and in the parameters to be monitored in the PDD b) The lime kilns specifications were submitted to the DOE c) PP has clarified the origin of the technology. d) PP has clarified that agave bagasse will be stored under aerobic conditions e) Project description in section A.3 (former A.4.3) of the PDD is in line with the monitoring plan f) PP has clarified which equipment would be affected/retrofitted by the project activity <p style="text-align: center;">This CAR is CLOSED</p>

					<p>section A.3 of the PDD version 2.0 (P115_VAL_167) since it includes the variables to be monitored during projects execution and the roles and responsibilities of each part of the operational and management structure.</p> <p>f) This information has been added in section A.3 and refers to the lances feeding system to be installed to the Maerz kiln of 400 tpd.</p>	
8		X	<p>CL 08</p> <p>a) PP shall clarify in what is the retrofit about</p> <p>b) PP shall state the biomass residues types, quantities and source should be documented in a transparently manner in the PDD</p> <p>c) PP should clarify in section B.4 the local regulations applicable to the project activity.</p>	5.2.2,5.4.6,5.4.7	<p>a) This information has been added to section A.3 of the PDD version 2.0 (VVS version, file P115_VAL_167).</p> <p>b) The information has been added in the sections A.3 and B.7.1 of the PDD.</p> <p>c) Please refer to the step 1 of the Analysis of the additionality of the project in section B.5 of the PDD version 2.0.</p> <p>Further request from DOE</p>	<p>Technical information related to the heat generation equipments considered within the boundary of the project activity. 2 Maerz kilns: one of 400 tpd to be retrofitted for the use of biomass residues, and a new 600 tpd already enabled with the option of the use of use of biomass residues. A Formal letter from the manufacturer Maerz dated on 15/04/2013, stating the model, serial number, commissioning date, type and capacity has been provided and correctly assessed by the DOE.</p> <p>Besides of this, in accordance with the CDM Glossary, the start date of a project is defined as follows: “In the context of a CDM project activity or CPA, the earliest date at which either the implementation or construction or real action of a CDM project activity or CPA begins.” Based on this the first event that comprehends real action is the signature of the contract for the construction of the foundations required for the</p>

				<p>a) Closed</p> <p>b) Agave bagasse quantities & ex-post values are not addressed in the section B.7.1 (P115_VAL_229).</p> <p>c) Closed</p> <p><u>Further responses from PP:</u> All of the estimated ex-post values for all of the variables have been added as a value or as a reference to other section of the PDD in the field "Value(s) applied" within the table of each variable of section B.7.1 as per the <i>Guidelines for completing the project design document form for small-scale CDM project activities version 1.0.</i></p> <p>Specifically the agave bagasse ex post values are included in the classification of agricultural residues for the parameter $BF_{k,y}$.</p> <p><u>Further request from DOE (2):</u> <u>Regarding c)</u></p> <ol style="list-style-type: none"> 1. The policies or regulations for the establishment and description of baseline 	<p>installation of Maerz kiln 2. Contract celebrated on one hand by Calidra de Occidente, S.A. de C.V. represented by José Antonio Hernández Liñán as legal representative, which will be denominated "owner of the construction" for contract purposed; and on the other hand Grupo Firmek, S.A. de C.V., represented by Edna Nayeli Senties Meinecke as legal representative, hereinafter "entrepreneur", under the following declarations and clauses.</p> <p>Hence the CL 08 is CLOSED.</p>
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					<p>scenario shall be addressed in the PDD. Also this shall be in line with paragraph 45 of CDM Project Standard</p> <p>2. The Unique Environmental License COC7414408811 issued on 17/01/2012 stated in section B.4 is not related to the project activity. PP shall revise it.</p> <p>3. The barriers that will be claimed in section B.4 shall be demonstrated objectively as per Guideline for objective demonstration and assessment of barrier in line with the paragraph 125 of VVS</p> <p><u>Further response from PP (2):</u></p> <p>1) A more extensive description of the policies and regulations applicable to the project activity has been included in the section B.4 of the PDD version 4.0 (P115_VAL_273).</p>	
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					<p>2) The description of the requirement of the Environmental Agency for the use of biomass residues in the Calidra de Occidente quicklime plant is provided to the DOE through the file (P115_VAL_275). Since the demanded operative details have still to be defined, the Unique Environmental License is expected to begin the issuance process in December of 2012 in order to obtain the updated license according to the Chronogram of implementation of the project activity (P115_VAL_244). This will be ready and delivered to the DOE in the first verification period.</p> <p>3) The DOE has refer to the item 125 of the CDM VCS which states:</p> <p><i>125. The DOE shall determine whether issues that have a direct impact on the</i></p>	
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					<p><i>financial returns of the project activity are not considered barriers and shall be assessed by investment analysis. This does not refer to either:</i></p> <p><i>(a) Risk related barriers, for example risk of technical failure, that could have negative effects on financial performance; or</i></p> <p><i>(b) Barriers related to the unavailability of sources of finance for the project activity.</i></p> <p>Due to the latest, the Investment barriers have been removed from section B.4 and placed in section B.5 to be further assessed as part of the Investment Analysis of the PDD version 4.0 (P115_VAL_273).</p> <p><u>Further request from DOE (3):</u> The Maerz Kiln which was commissioned on 2010, has not 3 years of baseline data; according to the methodology AM0036 which it is stated:</p>	
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				<p>“Existing heat generation equipment at the project site has either not used any biomass or has used only biomass residues (but no other type of biomass) for heat generation during the most recent three years³ prior to the implementation of the project activity;”</p> <p>³“If the three most recent historical years prior to the implementation of the project activity are not representative for the situation at the project site (e.g. a drought in one year, a unit or plant not operating during a certain year for technical reasons, etc), project participants may alternatively select the five most recent historical years from which one year may be excluded if deviating significantly from other years. The selection by project participants should be documented in the CDM-PDD and be applied to all relevant provisions and equations throughout this methodology in a consistent manner, including the applicability condition.“</p>	
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				<p>Therefore PP shall demonstrate 3 years of baseline data within the project boundary</p> <p><u>Further response from PP (3):</u> This specific applicability condition has been established within the methodology in order to discard the use of biomass in the existing heat generation equipment at the project site. In this case, the project site is Calidra de Occidente CaO Plant, which was bought by Group Calidra in 2007, has been working time before that transaction, and as checked by the DOE during the site visit and the validation process followed so far has never consumed biomass on its historical production records whatsoever. In fact, in the same applicability condition the methodology mentions “If the three most recent historical years prior to the implementation of the project activity are not representative for the situation at the project site (e.g. a drought in one year, a unit or plant not operating</p>	
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				<p>during a certain year for technical reasons, etc), project participants may alternatively select the five most recent historical years”, since the information given to the DOE covers all the historical information of this kiln it cannot be considered not to be representative, and the exclusive use of fossil fuels in the historical information of the kiln can also be concluded. Finally and performing an intensive analysis, as recognized by the ANFACAL (National Association of Lime Manufacturers) on the letter issued for the Common Practice Analysis (files P115_VAL_206 and P115_VAL_207), no biomass, there does not exist records of consumption of biomass, which includes the records reported by Calidra de Occidente CaO plant. Taking into consideration the information above it can be concluded that this applicability condition is covered by the proposed project activity.</p> <p><u>Further request from DOE (4):</u></p>	
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				<p>The PP is requested to provide reliable evidence related to the commissioning date of the existing heat equipment in the PDD as per evidence P115_VAL_210 (DD/MM/YYYY). Hence the PP shall clarify why the analysis of the historical data for determining the baseline emissions and estimate the emissions reduction calculation, including the information data of production, fuel consumption and the rest of the parameters considered ex-ante belongs to the period 2008- 2010, being the information provided to the DOE related to the commissioning date of the existing heat equipment prior the implementation of the project activity corresponds to the year 2010.</p> <p>As per data and parameters not monitored under AM0036 V4 (P18~20), at least three year data of data from the existing heat equipment (Maerz kiln of 400 tpd, "Historical annual heat generation from firing biomass residues at the project site, Quantity of biomass residue type k fired in all heat generation equipment at the</p>	
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				<p>project site and Quantity of fossil fuel type i fired in all heat generation equipment at the project site" are required for ex-ante estimation of the ER. The PP shall confirm when will the three-year historical data be available to the DOE?.</p> <p>All this information shall be provided to the DOE as part of the validation process, since this is clearly prescribed by the methodology and this is basic data for establishing the baseline scenario for the project activity.</p> <p><u>Further response from PP (4):</u></p> <p>The emission reductions model contains historical information for the 2008-2010 period since it corresponds to information available for the project site as required by the methodology in the section of data and parameters not monitored: <i>"Historical annual heat generation from firing biomass residues at the Project site during the year n, n-1 or n-2"</i>. The information for the 2008-2010 period is also required in the following applicability</p>	
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					<p>condition: “Existing heat generation equipment at the project site has either not used any biomass or has used only biomass residues (but no other type of biomass) for heat generation during the most recent three years prior to the implementation of the project activity”, which is precisely what is been given to the DOE through the file P115_VAL_198 (CaO production and fuels consumption report for the 2008-2010 period for the 400 tpd Maerz kiln and the plant in general). On the other hand, in order to be conservative the emission reductions calculation has been conducted including the lowest specific energy consumption available, which also results in the most conservative number of Certified Emission Reductions (CERs). Through the information already delivered to the DOE it can be assured that no biomass has been used as energy source in the project site, which is what is intended to be clarified by the applicability condition quoted above.</p>	
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					<p><u>Further request from the DOE 5:</u></p> <p>a) The PP is requested to clarify and provide reliable evidence related to the commissioning date of the heat equipment, due to the evidence provided by the PP refer to the production. Hence a clarification and a correct documentation shall be provided to the DOE.</p> <p>b) PDD Section A.1, the baseline scenario prior/after to the project implementation is not clearly described. PDD Section A.3 should clearly describe the historical data (fossil fuel consumption and petcoke) selected for establishing the baseline scenario. The PP shall clarify how the historical information for the 2008-2010 period is line with the methodology which</p>
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					<p>refers that “Existing heat generation equipment at the project site has either not used any biomass or has used only biomass residues (but no other type of biomass) for heat generation during the most recent three years³ prior to the implementation of the project activity; in this case information data used 2008 to 2010 is not consistent with the expected date of the start date 01/02/2013 which is the earliest date at which either the implementation or construction or real action of a project activity begins. Please refer the CL 23.</p> <p><u>Further response from PP (S):</u></p> <p>a) Information related to the commissioning date of each kiln (400 and 600 tpd respectively) is</p>	
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					<p>provided through the documents:</p> <p>P115_VAL_210: Evidences for the site visit from the 400 tpd kiln supplier for the equipment commissioning (2009).</p> <p>P115_VAL_209: Guarantee certificate for 600 tpd kiln issued at commissioning (2012).</p> <p>b) Since the starting date has been established March 18th, of 2011 the historical data included in the baseline has been updated with 2008-2010 information, which is the most recent three year period before the implementation of the project activity and complies with what has been stated in the methodology. The information related with the years 2008 and 2009 have been included within the</p>	
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					<p>“Historical data” sheet of the economic model in order to leave a precedent of the types and quantities of fossil fuels used in the past. The updated documents delivered to the DOE are the following: P115_VAL_305: Production reports. P115_VAL_293: PDD version 6.0. P115_VAL_297: Economic model version 6.0.</p> <p><u>Further request from the DOE 6:</u></p> <p>The PP is requested to provide a formal letter from the manufacturer Maerz, in order to assess a reliable evidence related to the commissioning date of the heat equipment, such letter shall provide all the technical data of the heat equipment e.g. type of the equipment, serial number, date when commissioning started (e.g. the date when commercial production started) etc., this documentation shall be provided to DOE and addressed in the PDD.</p>	
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				<p><u>Further response from PP (6):</u></p> <p>The letter requested by the DOE from Maerz is delivered to the DOE through the file P115_VAL_316.</p> <p><u>Further request from DOE (7):</u></p> <p>a) As per addressed in the PP The heat generation equipments considered within the boundary of the project activity are the two mentioned Maerz kilns: of the already existing 400 tpd (that started operations on December of 2009) to be retrofitted for the use of forestry and agricultural residues and the new Maerz kiln of 600 tpd (that started operations on April of 2012) already enabled with the option of the use of use of forestry and agricultural residues. The PP is requested to clarify why these activities were not included in timeline of</p>	
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					<p>this project in section B.5 of PDD..?..</p> <p>b) The commissioning date of the new 600 tpd kiln was in April 2012. Before commissioning date of this new kiln, some real actions should be done including purchase contract, installment and so on. So the starting date defined as purchase date of the drying system for the forestry and agricultural residues conditioning on 1/11/ 2013 could not be the earliest date. The purchase date of the drying system for the forestry and agricultural residues conditioning is only for the retrofit of the existing kiln.</p> <p><u>Further response from PP (7):</u></p> <p>a) The timeline of events added in section B.5 included all the relevant events related to the project activity. All of</p>	
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					<p>the information regarding the scenarios before and after its implementation was included in section A.3 as requested before by the DOE within this finding.</p> <p>b) The project consists in the retrofit of maerz kiln 1, the installation of peripheral and pretreatment equipment for the use of biomass residues as fuels, and the installation of the maerz kiln 2, which from manufacturer, is already able to burn biomass residues.</p> <p>According to the CDM Glossary, the start date of a project is defined as follows: <i>“In the context of a CDM project activity or CPA, the earliest date at which either the implementation or construction or real action of a CDM project activity or CPA begins.”</i></p> <p>Taking into consideration the latest, the first event that comprehends real action is the signature of the contract for the construction of the foundations required for the installation of Maerz kiln 2.</p>	
9		X	CL 09	5.3	The clarification has been	PP has clarified the reason for discarding CH4 emissions

			<p>PP shall clarify in section B.3 in the table 4 why the CH₄ emissions were discarded for project (PE) and baseline emissions (BE) as per AM0036 version 04.</p>	<p>added to section B.3 table 2 (table 4 in the former VVS version).</p> <p><u>Further request from DOE:</u></p> <p>It was clarified that PP decided to discard the CH₄ emissions; nevertheless PP shall further explain why they decided to discard CH₄ emissions</p> <p><u>Further request from PP:</u> As stated in Table 2 “Baseline and project activity boundaries” of the PDD version 3.0 (P115_VAL_229), CH₄ emissions have been excluded from baseline and project emissions only for calculation simplification.</p> <p><u>Further request from DOE 2:</u> As per EB 69 annex 3 All project design documents (PDDs) to be requested for registration of project activities submitted on or after 1 January 2013 shall apply the GWPs valid for the second commitment period for the purposes of demonstrating additionality and ex-ante calculation of emission reductions or removals. Hence the PP is requested to the</p>	<p>for BE and PE and it is concluded that it is conservative and reasonable. Furthermore GWPs has been updated in accordance with the the second commitment period of the Kyoto Protocol, value for the 2nd commitment period for methane is 25, which has been used to update the ERs excel sheet and the PDD.</p> <p>Hence the CL is CLOSED.</p>
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				<p>update the PDD and the ERs spreadsheet accordingly.</p> <p><u>Response of the PP:</u></p> <p>Whitin the quoted reference it is stated that “All emission reductions and removals achieved by CDM project activities and PoAs in the second commitment period of the Kyoto Protocol shall be calculated using the global warming potentials (GWPs) adopted by the Conference of the Parties serving as the meeting of the Parties at its seventh session, in accordance with decision 4/CMP.7.” In the same way, within the decision 4/CMP.7 it is stated that the GWP used “shall be those listed in the column entitled <i>Global Warming Potential for Given Time Horizon</i> in table 2.14 of the errata to the contribution of Working Group I to the Fourth Assessment Report of the IPCC, based on the effects of greenhouse gases over a 100-year time horizon”. Whitin this report, the value for the 2nd commitment period for methane is 25, which has been used to update the ER</p>	
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					calculation spreadsheet (P115_VAL_318) and the PDD section B.6.2 (P115_VAL_317).	
10	X		CAR 10 The tool version referenced in the GSP PDD for “Tool for the demonstration and assessment of additionality” is not consistent within the whole document. PP is requested to correct it as needed.	5.4	The version of this tool has been revised in the whole document and corrected to be the latest available 07.0.0.	PP has updated the tool to the most recent version. This CAR is CLOSED
11	X		CAR 11 a) In the calculation spreadsheet, methodology version shall be corrected. b) PP shall be conservative in the ER calculation, therefore is requested to utilize “ROUND DOWN” function for BE and “ROUND UP” for PE & Leakage. c) In Annex 3, the emission factor for electricity is addressed ex-post, in the rest of the document is addressed ex ante. PP is requested to correct it. d) Footnote 14 of the GSP PDD shall be updated according to the evidence provided. e) Electricity consumption evidence needs to be provided to the DOE.	5.5.1, 5.5.3	a) The version has been corrected in the latest version of the calculation spreadsheet (P115_VAL_218). b) This change has been applied to the version 2 of the calculation spreadsheet. c) This has been corrected in Appendix 4 (former Annex 3). d) This has been updated in PDD version 2.0 (P115_VAL_167, also corresponds to footnote 14). e) Evidence of electricity consumption is provided through the file P115_VAL_216 and P115_VAL_217.	a) Methodology version in the calculation spreadsheet has been updated b) Round down function has been used as a conservative approach c) The emission factor has been addressed to be ex-ante d) Footnote 14 is according to the evidence provided e) Electricity consumption evidence was submitted to the DOE This CAR is CLOSED

12	X		<p>CAR 12</p> <ul style="list-style-type: none"> a) PP is requested to add more information in the PDD how the parameters were selected, historical fuel consumption and how the calculation was performed for the ER calculus. b) Biomass transported is based on dry basis as per site visit observations. PP is requested to clarify and address it in the PDD. c) Diesel consumption and transportation data should be monitored ex-post. 	<p>5.5.4,5.5.5, 5.5.7</p>	<ul style="list-style-type: none"> a) The requested information has been added in the last paragraph of section B.4. b) The total transported biomass will be monitored through the variable FRf,m as delivered by the supplier. Please refer to the description of this variable in section B.7.1. c) Diesel consumption and transportation data will be monitored ex-post. <p><u>Further request from DOE</u></p> <ul style="list-style-type: none"> a) Parameters requested shall be related to the kilns included in the boundary. Furthermore, in the ER calculus, the specific energy consumption shall be addressed as per manufacturer's specifications of the heat equipment b) Closed c) Refer to CAR 15 <p><u>Further response from PP:</u></p> <ul style="list-style-type: none"> a) As requested by the DOE, the calculation of the emission 	<p>PP has corrected the requested information for the ER calculation</p> <p>This CAR is CLOSED</p>
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					<p>reductions have been revised using information specific for the kilns included in the project boundary. Only the specific energy consumption of the kilns of the project activity has been use for the calculations of emission reductions as can be seen in the economic model and emission reductions spreadsheet version 3.0 (P115_VAL_238). The PDD version 3.0 (P115_VAL_229) has also been updated with the revised calculations.</p> <p>c) Diesel consumption, along with the parameters used for the calculation of emissions due to transportation will be monitored ex-post. Additional information can be found in the answer to CAR 15.</p>	
13		X	<p>CL 13</p> <p>a) PP shall clarify the decision date to proceed with the project activity. PP is requested to provide evidence.</p> <p>b) Starting date addressed in the GSP PDD is not consistent with the on-site observations. PP shall clarify the starting date of the project activity according the “Glossary of CDM terms”. PP shall submit</p>	7.1.1, 7.1.2, 7.1.3,7.1.4	<p>a) Conducting the project activity depends on the registration of the project under the CDM and the procurement of its incentives; nevertheless, the date of publication of the project in the UNFCCC web page to start validation (March 17th of 2012) has been taken as the</p>	<p>The decision to proceed with the project activity was addressed on 21/02/2012 and the project start date was expected on 01/11/2013</p> <p>This CL is CLOSED</p>

		evidence.		<p>management decision. Latest statement is in accordance with previous relevant dates: 1. when the feasibility study was finished (November 4th of 2011) and 2. When the turn key project quotation was obtained (January 24th of 2012).</p> <p>b) The project activity is expecting to sign a contract with engineering or equipment supplier by the end of 2012, then October 1st has been chosen as starting date. Since the latest date includes an event that commits the PPs to conduct the project activity, the requirement of starting date as per definition in the CDM Glossary will be fulfilled: <i>“the earliest date at which either the implementation or construction or real action of a CDM project activity or PoA begins”</i>.</p> <p><u>Further request from DOE</u></p>	
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				<p>a) Closed</p> <p>b) PP shall submit the work program of project activity showing the starting date.</p> <p><u>Further response from PP:</u></p> <p>The chronogram of implementation of the project activity is delivered to the DOE through the document P115_VAL_244.</p> <p><u>Further request from DOE</u></p> <p><u>(2)</u></p> <p>Regarding point a): Management decision date is the same as the publication; PP shall clarify how the investment analysis was taken into account to go ahead with the project in the same day of the publication.</p> <p>Regarding point b): The chronogram of implementation does not show clearly the starting date of project activity. As 01/10/2012 is stated as start date of project activity; PP is requested to provide reliable evidence for the adopted starting date.</p>	
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					<p><u>Further request from PP (2)</u></p> <ol style="list-style-type: none">1. The date has been revised and corrected in the latest version of the PDD (P115_VAL_273) to 21/02/2012. The new date is correct since it occurred before the delivery of the PDD to the DOE for its revision and approval for publication, and after all of the available information was analyzed to close the economic model.2. The chronogram of implementation has been updated (P115_VAL_244) and shows the expected plan for the development of the project activity. Nevertheless, an intention letter (P115_VAL_261) has been signed with one of the suppliers in order to formalize the purchase of the biomass residues once the project is registered as CDM and is in operation.	
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				<p><u>Further request from DOE (2):</u></p> <ol style="list-style-type: none">1. Evidence need to be submitted for this new date2. The start date of project activity addressed in the PDD is not according to the evidence provided and not in line with Glossary of CDM terms v.7.0.0. PP is requested to revise it <p><u>Further response from PP (2):</u></p> <ol style="list-style-type: none">1. The evidences for the initial assessment of the project were provided to the DOE in February 22nd of 2012 (P115_VAL_281). All of the evidences for the project were analyzed before the latest mentioned date (February 21st of 2012 as stated in the PDD version 5, P115_VAL_279).2. As suggested by the DOE the Glossary of CDM terms V.7 has	
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					<p>been consulted. This document defines start date as follows: “In the context of a CDM project activity or CPA, the earliest date at which either the implementation or construction or real action of a CDM project activity or CPA begins”. It has been previously clarified to the DOE that the project activity has not yet been implemented, being why evidences of the project construction cannot be provided yet, nevertheless, 01/02/2013 is the expected date for the purchase of the drying system, after this date the project participant will be able to give the correspondent invoice, working as an evidence of real action for the project and agrees the definition of the Glossary of CDM terms V.7.</p> <p>Further request from DOE</p>	
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					<p>(2):</p> <p>In section B.5, the date is not consistent on 21/02/2012, addressed as the management decision date, is not consistent with the reference stated in the PDD. PP shall revise it</p> <p><u>Further response from PP</u></p> <p>(2):</p> <p>In order for the reference of the management decision to be consistent it has been changed within the PDD to the copy of the email use for the delivery of the first information of the proposed project activity to the DOE (P115_VAL_281). Since the documentation was February 22nd of 2012 and the management decision was concluded one day earlier, the date February 21st results consistent as requested.</p>	
14	X		<p>CAR 14</p> <p>a) PP shall submit evidence of the operational lifetime for the project activity.</p> <p>b) As project activity consists on a retrofit of a lime kiln and the construction of a new lime kiln for utilizing alternative fuels, PP is requested to follow the tool</p>	7.1.9	<p>a) Evidence of the operational lifetime for the main equipment required for the project activity is delivered through the file P115_VAL_214.</p> <p>b) The tool has been used and added to the section A.3 of version</p>	<p>e) PP has showed evidence of the operational lifetime of the project activity.</p> <p>f) Also, PP has followed the tool for determining the remaining lifetime of the equipment.</p> <p>g) As per “Tool to determine the remaining lifetime of equipment”, the remaining lifetime of the Maerz kilns, according to manufacturer’s information “the firsts Maerz PFR-kilns were built more than 35 years ago and are still operating, the installed kilns included as part of</p>

			for the remaining lifetime of the equipment and shall be addressed in the PDD.		<p>2.0 of the PDD. The following evidences are used for the application of this tool:</p> <ul style="list-style-type: none"> c) P115_VAL_214: Biomass residues expert's letter. d) P115_VAL_178: Specs sheet of Maerz kilns (page 17 "Modernization and Revamping" section). e) P115_VAL_209: Evidence of commissioning date for the 600 tpd kiln. f) P115_VAL_210: Evidence for the commissioning date for the 400 tpd kiln. g) P115_VAL_212: Information from the supplier about the operational lifetime of the kilns. <p>By this analysis it is shown that the equipments of the project will have a remaining lifetime of 20 years, almost equal to the chosen crediting period.</p> <p><u>Further request from DOE:</u></p> <p>This statement in the PDD is</p>	<p>the project activity have an operational lifetime of 35 years and taking into consideration the commissioning date of the oldest kiln (the 400 tpd), which is December of 2009.</p> <p>This CAR is CLOSED</p>
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				<p>not consistent with manufacturer's brochure: <i>"the firsts Maerz PFR-kilns were built more than 18 years ago and are still operating"</i>. PP is requested to be consistent</p> <p><u>Further response from PP:</u> The correction has been performed in section A.3 of the PDD version 3.0 (P115_VAL_229) as per manufacturer's brochure <i>"the firsts Maerz PFR-kilns were built more than 35 years ago and are still operating"</i></p> <p><u>Further request from DOE 2:</u> As per "Tool to determine the remaining lifetime of equipment", the applicability of this guidance is for the projects that involves a retrofit or replacement of existing equipment. The remaining lifetime is only for the existing heat generation equipment rather than new one, in this project, the existing heat generation equipment is 400 tpd kiln rather than feeding system. So please confirm the operation date, technical lifetime of 400 tpd to calculate the remaining lifetime</p>	
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				<p>accordingly.</p> <ul style="list-style-type: none"> • Technical lifetime • Operational lifetime • Remaining lifetime (RL) <p>a) 1st: The starting date of operation for existing 400 tpd kiln (before retrofit);</p> <p>b) Total operation years for existing 400 tpd kiln (before retrofit) till the starting date of project activity</p> <p>c) Technical lifetime of the existing 400 tpd kiln (before retrofit).</p> <p>d) Technical lifetime of the existing 400 tpd kiln (before retrofit).</p> <p><u>Further response from PP (2):</u></p> <p>As requested by the DOE the referred kiln (400 tpd) started operations in December of 2009, having as a typical lifetime 35 years its correspondent remaining lifetime is $35 - (2013 - 2009) = 31$ years, as minimum with the appropriate maintenance.</p>	
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					<ul style="list-style-type: none"> a) Commissioning date of the 400 tpd kiln: December of 2009. b) Total operation years from the commissioning to the starting date: 4 years. c) Technical lifetime: 35 years (as minimum). d) Remaining lifetime: 31 years. 	
15	X		<p>CAR 15</p> <p>It should be clarified with supporting evidence for the following financial parameters::</p> <ul style="list-style-type: none"> a) Electricity consumption evidence b) Diesel consumption evidence c) Manufacturer evidence d) Biomass price e) Pet-Coke price f) Distance between Calidra de Occidente plant and biomass residues origin g) Historical CaO production h) Historical pet-coke consumption for the plant and Maerz kiln to be retrofitted i) Pet coke analysis certificate j) Tax rate k) Operating days l) Simple translation to English from “Report of heat value of the agave residues sample 1” 	7.3.1	<p>The following evidences are provided for each case:</p> <ul style="list-style-type: none"> a) P115_VAL_216: Electric energy consumption for the silo and P115_VAL_217: Electric energy consumption for the biomass grinding system. b) P115_VAL_128: Forklift truck specs sheet. c) P115_VAL_178: Specs sheet of the Maerz kilns. d) P115_VAL_190: Biomass quotation. e) P115_VAL_055: Petcoke’s invoice. f) P115_VAL_044: Distance between Calidra de Occidente CaO plant and biomass 	<p>The financial parameters were clarified with supporting evidence</p> <p>This CAR is CLOSED</p>

			& "Report of heat value of the agave residues sample 2"		<p>residues origin.</p> <p>g) P115_VAL_198: Historical production and petcoke consumption reports.</p> <p>h) P115_VAL_198: Historical production and petcoke consumption reports.</p> <p>i) P115_VAL_122: Petcoke analysis certificate.</p> <p>j) P115_VAL_190: Official journal of the federation.</p> <p>k) The information about the operating days has been updated and can be verified in the economic model and emission reductions spreadsheet version 2.0 (P115_VAL_218).</p> <p>l) P115_VAL_045: Report of calorific value of agave with notes in English.</p> <p><u>Further request from DOE:</u></p> <p>a) Electric energy bill (P115_VAL_181) shall be submitted to the DOE</p> <p>b) Closed</p> <p>c) Kiln's Installed capacity in</p>	
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					<p>Environmental Unique License #COC741408811 is not consistent with the addressed one in the PDD. PP is requested to submit further evidence related to kiln's capacity and year of the installation (i.e. Pictures of the kiln's nameplate...)</p> <p>d) Closed e) Closed f) Regarding transportation: 1) Evidence regarding the trip distance from biomass residues source and quicklime plant shows single trip distance. Therefore in the ER calculation, the round trip shall be addressed. 2) PP is requested to document in the PDD the</p>	
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					<p>freight transportation activities as per tool “Project and leakage emissions from road transportation of freight” v.01.</p> <p>3) Furthermore, PP is requested to submit further evidence for the freight cost (i.e quotation from different suppliers, price index...)</p> <p>g) Closed</p> <p>h) Maerz kiln fuel consumption evidence shall be submitted to the DOE for the previous years before the expected implementation of the project</p> <p>i) Closed</p> <p>j) Closed</p> <p>k) Operating days evidence shall be submitted</p> <p>l) Closed</p>	
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					<p><u>Further response from PP:</u></p> <p>a) The electric energy bill is delivered to the DOE through the file P115_VAL_181.</p> <p>c) Evidence of both Maerz kilns capacity and installation date is provided to the DOE through the files P115_VAL_209 and P115_VAL_247.</p> <p>f) Regarding transportation:</p> <p>1. The outbound trip distance from the biomass source to the CaO plant is the same for the return trip, being why a single route has been marked. Please refer to the tool “Project and leakage emissions from road transportation of freight” v.01.0.0 (P115_VAL_109) in order to verify that the conservative default CO2 emission factor for freight transportation ($EF_{CO_2,f}$) already considers both, the outbound trip of the vehicles full of biomass from its source to the plant and its return trip being empty. Latest is in accordance to the equation used for option B in the same tool, which only requires the “return trip road distance”, not the “round trip”.</p>	
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				<p>2. The freight transportation activities have been documented in section B.6.1 of the PDD version 3.0 as per the tool “Project and leakage emissions from road transportation of freight” v.01.</p> <p>3. As requested, another evidence of the freight costs is provided to the DOE through the file P115_VAL_241.</p> <p>h) The fuel consumption and CaO production of the 400 tpd Maerz kiln is provided to the DOE through the file P115_VAL_230.</p> <p>k) The expected operating days for Maerz kilns is provided to the DOE through the file P115_VAL_249.</p> <p><u>Further request from DOE (2)</u></p> <p>f) Regarding the transportation, PP shall justify the use of heavy vehicles as per emission factor for freight transportation activity ($EF_{CO_2,f}$) chosen and submit evidence of the Gross Vehicle Mass specifications for the freight activity in line</p>	
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					with the quotation provided	
					<p><u>Further response from PP (2)</u></p> <p>f) The transport to be used in the project activity is evidence through the file P115_VAL_262 and P115_VAL_265, where it is stated that the freight will be conducted in 30 tons capacity trucks, which is within the maximum capacity limits stated in the Mexican Official Standard NOM-012-SCT-2-2008 (P115_VAL_263).</p>	
16	X		<p>CAR 16</p> <p>a) Input values shall be addressed in the PDD</p> <p>b) If benchmark is used from the default value from the EB 62 Annex 5, IRR shall be calculated post-tax</p> <p>c) O&M costs are stated as 2% of the investment cost. PP should clarify if salaries for workers will be added in the financial model</p> <p>d) PP is requested to include the revenue from pet-coke saving</p> <p>e) No fair (residual) value was</p>	<p>7.3.2, 7.3.3, 7.3.4, 7.3.5, 7.3.6,7.3. 7, 7.3.8, 7.3.9, 7.3.10,</p>	<p>a) Main input values have been added in section B.5 of the PDD version 2.0.</p> <p>b) The benchmark from the “Guidelines on the assessment of investment analysis” has been chosen and the Equity IRR of the project has been calculated after taxes (file P115_VAL_218).</p> <p>c) The salaries have been added in the economic</p>	<p>The PP has performed the financial analysis according to the Guideline on the assessment of investment analysis v. 5.</p> <p>This CAR is CLOSED</p>

			<p>considered at the end of year 20 as a positive cash flow</p> <p>f) As per GSP PDD, it is not clear whether PP states that the alternative action does not require investment. PP is requested to clarify it</p>		<p>model version 2.0 (P115_VAL_218).</p> <p>d) The savings due to the replacement of fossil fuels by biomass residues have been included in the economic model version 2.0 as a positive cash flow or income (or revenue).</p> <p>e) At the end of the lifetime of the project activity the equipment will be fully depreciated according to Mexican tax law, then no residual value should be included.</p> <p>f) This information has been added in the section B.5 of the PDD version 2.0 (P115_VAL_167).</p> <p><u>Further request from DOE:</u></p> <p>a) PP should clarify why the exchange rate taken from one day is representative of the whole year</p> <p>b) Closed</p> <p>c) Diesel price value is not according to the government source. PP</p>	
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					<p>shall clarify it. Units for Minimum salaries are not according to the official sources; therefore PP is requested to correct it in the financial model. Also, operator's salaries in Mexico are paid the whole year, not matter the plant operational time, PP should check it.</p> <p>d) Closed</p> <p>e) Dust collector is being depreciated twice. PP is requested to correct it</p> <p>f) Closed</p> <p><u>Further response from PP:</u></p> <p>a) The exchange rate has been replaced by a broader average value (2nd semester of 2011 and 1st semester of 2012) in the economic model version 3.0 (P115_VAL_238) in order to have a more representative value.</p> <p>b) The price has been revised and updated according to the current diesel price (P115_VAL_243). The operator's salaries have also been revised and corrected as</p>	
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					requested by the DOE. e) The depreciation has been revised and corrected in the economic model and emission reductions spreadsheet 3.0 (P115_VAL_238).	
17	X		CAR 17 a) Values in sensitivity analysis were not easily verified because of its low value. PP is requested to apply vertical sensitivity analysis. b) There are project costs that are more than 20% of the total project costs. PP is requested to address these costs in the sensitivity analysis	7.3.11	a) A break-even analysis has been added to the economic model version 2.0 and the results of this analysis have been added to the PDD version 2.0 section B.5 (file P115_VAL_167). b) The “project activity costs” have also been included in the sensitivity analysis.	PP has analyzed the sensitivity in a vertical form, justifying the probability of occurrence of each issue. Furthermore, it has added the project costs in the analysis. This CAR is CLOSED
18	X		CAR 18 a) PP should remove the “first of its kind” if it is not going to be used. b) PP shall provide evidence for conducting common practice as per EB 69 Annex 08.	7.5.1, 7.5.2, 7.5.3, 7.5.4, 7.5.5	a) The first of a kind has been removed since the common practice analysis has been conducted and the investment analysis has been used to prove the unattractiveness of the project without the CDM incentives and therefore the additionality of the project. b) Evidence to conduct the assessment of common practice is	a) PP has decided not to use the guideline “first of its kind” to demonstrate additionality. b) The common practice has been assessed as per Guidelines on Common practice, EB 69 annex 8 version 02.0, addressed in the PDD and evidence was submitted This CAR is CLOSED

					delivered through the file P115_VAL_206 and P115_VAL_207.	
19	X		CAR 19 a) New data management description shall be described b) Training shall be indicated c) Standards from local regulation or manufacturer for monitoring shall be addressed d) Emergencies shall be addressed in the PDD e) PP shall clarify why the selected data was taken from 2008, 2009, 2010 f) PP shall clarify the plant operational time and evidence related to historical production shall be provided to the DOE. g) PP is requested to address calibration frequency, monitoring equipment accuracy and localization as per section B.7.1 of the Guideline for completing CDM PDD	8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.9, 8.10, 8.11, 8.12, 8.13, 8.14, 8.15, 8.16, 8.17, 8.18, 8.19, 8.20, 8.21, 8.22	a) Information about the new management system has been added to the section B.7.3 “Other elements of monitoring plan” and is provided to the DOE through the file P115_VAL_226. b) The information about training has been added to the section B.7.3 of the PDD. c) The information from the manufacturer about equipment’s calibration frequency will be follow. This has also been added in section B.7.1 of the PDD. d) Contingency measures to solve emergencies have been added to the section B.7.3 of the PDD as part of “quality control”. e) The feasibility study has been finished by the end of 2011 and emission reduction calculations have also begun at the end of	The requested changes were addressed in the PDD This CAR is CLOSED

					<p>that year. To accomplish these calculations the information for CaO production and fossil fuels consumption from the immediate previous three year period has been used, which means data from 2008 to 2010.</p> <p>f) Evidences are provided through the file P115_VAL_198.</p> <p>g) The information required has been added for each variable in the section B.7.1 of the PDD version 2.0.</p> <p><u>Further request from DOE</u></p> <p>a) CLOSED</p> <p>b) CLOSED</p> <p>c) CLOSED</p> <p>d) CLOSED</p> <p>e) Data taken for quicklime production and fossil fuel consumption shall be taken only for the kilns included in the project boundary</p> <p>f) Refer to e)</p> <p>g) Calibration frequency, accuracy or</p>	
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					<p>measurement range shall be indicated for the measurement instruments including scale, electricity meters and weighting feeder</p> <p><u>Further response from PP:</u></p> <p>e) As requested, only the information of the kilns included in the project boundary has been used in the emission reductions calculation, meanwhile, the information of the whole plant has been included only as a reference for the project activity. Please refer to the economic model and emission reductions spreadsheet version 3.0 (P115_VAL_238).</p> <p>f) Refer to e.</p> <p>g) Since the equipments for the project implementation are still to be purchased it is not possible to define at this point specific instrumentations information. Information as the calibration frequency will depend to the manufacturer's</p>	
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					<p>recommendation. This will be defined at the monitoring stage, when the definitive equipments are already installed. Information about the responsible team in charge of conducting the measurement can be found in section B.7.3 “Other elements of the monitoring plan”.</p> <p><u>Further request from DOE (2):</u></p> <p>Regarding point g):</p> <ul style="list-style-type: none">• Information of calibration, measurement frequency and accuracy shall defined at the validation stage (this in accordance with Guideline for completing CDM PDD)• As per section B.7.1, parameters NCV_i & $NCV_{n,y}$ will be monitored by sampling; therefore section B.7.2 shall be filled out as per Guideline for completing CDM PDD.	
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					<p><u>Further request from PP (2):</u></p> <ul style="list-style-type: none">• The description of the variables to be monitored in section B.7.1 has been revised and corrected according to the requirements of the Guideline for completing CDM PDD).• As stated in section B.7.2 of the Guideline for completing CDM PDD: <i>“If data and parameters monitored in section B.7.1 above are to be determined by a sampling approach, provide a description of the sampling plan in accordance with the recommended outline for a sampling plan in the “Standard for sampling and surveys for CDM project activities and programme of activities”.”</i>. According to the “Standard for sampling and surveys
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					<p>for CDM project activities and programme of activities” version 2.0: <i>Requirements for sampling are defined either in the applicable CDM methodology or in paragraphs below, with the applicable methodology having precedence.</i> For the current project activity, the requirements for sampling are defined within the Methodology AM0036 for the variables: NCV_k, NCV_i and $NCV_{n,y}$, to be three samples each 6 months, being in accordance with the quoted “Standard for sampling and surveys for CDM project activities and programme of activities”.</p> <p><u>Further request from DOE (2):</u></p> <p>Guideline on common practice v.2.0.0 shall be</p>	
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					<p>addressed in the PDD.</p> <p>Parameter $EF_{km,CO_2,y}$ is an ex-ante value; therefore it shall be addressed in section B.6.2 of PDD.</p> <p><u>Further response from PP (2):</u></p> <p>The Guideline on common practice has been updated to version 02.0 in the latest version of the PDD (P115_VAL_279) as requested by the DOE.</p> <p>The parameter $EF_{km,CO_2,y}$ has been moved to section B.6.2 as requested.</p>	
20	X		<p>CAR 20</p> <p>a) Means of invitation shall be provided to the DOE</p> <p>b) The presentation given to stakeholders shall be provided to the DOE</p>	12.3, 12.4, 12.5	<p>a) Means of invitation are delivered to the DOE through the files P115_VAL_073 and the evidence for the participation from stakeholders has been delivered through the files P115_VAL_093 and P115_VAL_097.</p> <p>b) The presentation given to the stakeholders is delivered through the file P115_VAL_064.</p>	<p>Evidence related to the local stakeholders consultation has been submitted to the DOE</p> <p>This CAR is CLOSED</p>
21	X		CAR 21	11.2	The document “ <i>Cambio de uso</i> ”	PP has clarified that according national regulation there

			<p>The EIA referred in the Unique Environmental License is not consistent with the EIA submitted to the DOE. PP is requested to submit the EIA referred in the Unique Environmental License</p>	<p><i>del suelo para frentes de extracción de roca caliza”</i> delivered to the DOE through the file P115_VAL_116 corresponds to the updated EIA, as can be verified in the latest documents sent to the Environmental Ministry (SEMARNAT), evidences contained in the file P115_VAL_220.</p> <p><u>Further request from DOE:</u></p> <p>EIA and Unique Environmental license are not related to the project activity. PP is requested to submit these documents related to the project activity</p> <p><u>Further response from PP:</u></p> <p>The EIA and Unique Environmental License are only related to the current Calidra de Occidente CaO plant activity, the permit related to the use of non hazardous materials will be obtained from SEMARNAT by the end of 2012, which is significantly sooner of what is necessary since the test with these residues is expected by</p>	<p>is not need of EIA and a letter from SEMARNAT was submittes explaining that only an update of the Environmental License would be needed once the project is implemented.</p> <p>This CAR is CLOSED</p>
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				<p>the end of 2013. The expected date for the issuance of such permit will be November of 2012, which is consistent with the chronogram of implementation of the project activity delivered to the DOE (P115_VAL_244). This document can be delivered to the DOE during the first verification period.</p> <p><u>Further request from DOE (2):</u></p> <ol style="list-style-type: none">1. Evidence that the request for the permit was submitted to SEMARNAT shall be submitted to the DOE.2. Section D of PDD explains the impacts on the land use change for the extraction of limestone. PP shall clarify how these impacts are related to the project activity which it is related to a fuel switch type. <p><u>Further request from PP (2):</u></p> <ol style="list-style-type: none">1. The description of the requirement of the	
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					<p>Environmental Agency for the use of biomass residues in the Calidra de Occidente quicklime plant is provided to the DOE through the file (P115_VAL_275). Since the demanded operative details have still to be defined, the Unique Environmental License is expected to begin the issuance process in December of 2012 in order to obtain the updated license according to the Chronogram of implementation of the project activity (P115_VAL_244). This will be ready and delivered to the DOE in the first verification period.</p> <p>2. Section D of the PDD has been revised and has been stated that no significative negative impacts are expected to occur since the project is basically about the use of a non hazardous residue (this can be verified in the</p>	
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					Mexican Official Standard NOM-052-SEMARNAT-2005), and its use is not prohibited by any environmental regulation, local, regional or national.	
22		X	CL 22 The Unique Environmental License establishes that CALIDRA DE OCCIDENTE S.A. de C.V has no authorization for utilizing alternative fuels different from the stated in the NOM-085-SEMARNAT-1994. As biomass residues are not stated on this regulation, PP is requested to clarify which authorization or regulation allows the lime plant to burn biomass residues.	11.2	<p>The NOM-085-SEMARNAT-1994 refers to sources that use liquid, solid, and gaseous or any combination of fossil fuels and obviously does not mentions any renewable energy fuels as biomass residues. On the other hand, the term “alternative” in the license refers to any other fossil fuel not comprehended by this norm and that qualifies as hazardous material, e.g. tyres, used oils, ashes, etc.</p> <p>The biomass residues as the ones included in this project activity do not qualify as hazardous materials since they are not corrosive, reactive, explosive, toxic, or inflammable and do not contain any contagious agent that gives them a dangerous quality. These residues are not currently forbidden by any Mexican legislation. The</p>	PP has clarified that as per Environmental Law an EIA is not needed and only an update of the Environmental Licence will be obtained once the project is implemented. This CL is CLOSED

				<p>definition of hazardous material by Mexican law can be found in the following link:</p> <p>http://www.semarnat.gob.mx/TEMAS/GESTIONAMBIENTAL/MATERIALESACTIVIDADES/Paginas/ResPel.aspx</p> <p>The list of hazardous materials can be verified in the following link:</p> <p>http://app1.semarnat.gob.mx/dgeia/estadisticas_2000/informe_2000/03_Suelos/3.6_Gestion/data_gestion/peligrosos.htm</p> <p><u>Further request from DOE:</u></p> <p>At the moment of validation PP complies with environmental regulations. Nevertheless, the current Environmental License provided by the PP does not include the new kiln commissioned on March 2012, therefore PP shall submit to the DOE the most updated request for Environmental License including the kiln of 600 tpd</p> <p><u>Further response from PP:</u></p> <p>The updated Unique Environmental License is</p>	
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				<p>undergoing the issuance process since it just started operations at the beginning of 2012; it is expected to be issued in November of 2012, which is significantly before the starting of the first test for the use of biomass residues (programmed for Q4 of 2013 as can be seen in the chronogram of implementation of the project, file P115_VAL_244). The updated Unique Environmental License can be delivered to the DOE after that date or at the first verification period.</p> <p><u>Further request from DOE (2):</u> Evidence that the request for the permit was submitted to SEMARNAT shall be submitted to the DOE.</p> <p><u>Further request from PP (2):</u> The description of the requirement of the Environmental Agency for the use of biomass residues in the Calidra de Occidente quicklime plant is provided to the DOE through the file (P115_VAL_275). Since the demanded operative details have still to be defined, the</p>	
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					<p>Unique Environmental License is expected to begin the issuance process in December of 2012 in order to obtain the updated license according to the Chronogram of implementation of the project activity (P115_VAL_244). This will be ready and delivered to the DOE in the first verification period.</p>	
23		X	<p>CL: Considering that the starting date stated in the latest version of the PDD is 01/02/2013. The PP is requested to confirm whether it can be confirmed now. Moreover, is there any construction contract signed so far?</p> <p>Furthermore, a planning of the project implementation shall be provided to the DOE in order to evidence the adopted starting date of project activity.</p>	7.1.1	<p>The updated chronogram of implementation of the project activity has been updated, being the new expected started date on May 1st of 2013. No construction contract has been signed yet, the current starting date evidence corresponds to the implementation chronogram delivered to the DOE through the file P115_VAL_294.</p> <p><u>Further request from DOE:</u></p> <p>Considering that the starting date stated in the latest version of the PDD is 01/05/2013. The PP is requested to confirm whether it can be confirmed now. Moreover, is there any construction contract signed so far?. Hence an updated planning shall be provided to the DOE.</p> <p><u>Response from PP:</u></p>	<p>Based on the planning provided by the PP the starting date of the project is expected to be during the second semester of 2013. Hence the adopted starting date has been supported.</p> <p>The CL is CLOSED.</p>

					No contract has been signed so far, in fact, a delay is expected for the purchase of the equipment of the project. The updated chronogram is delivered to the DOE through the file P115_VAL_324. The correspondent changes on the starting date have been applied to the PDD (file P115_VAL_326) in sections B.5 (timeline of events of the project) and C.1.1 (start date of the project activity).	
24		X	CL: The PP is resquested to clarify why the annual estimation of emission reductions stated in the GSP-PDD 92,577 t CO ₂ e was significantly changed with the latest version of the PDD where the annual emission reductions are 52,063 t CO ₂ e.	4.5	The significant reduction has been produced by the use of more accurate information and a more conservative approach requested by the DOE regarding some of the parameters used in the Emissions Reduction calculation during the validation process (e.g. quantity of fossil fuels used in the most recent historical three years period).	The PP has clarified the significant change in the calculation of the ERs, which is based on the latest historical data included in the baseline and has been updated with 2008 - 2010 information, which is the most recent three year period before the implementation of the project activity and complies with what has been stated in the methodology. The CL is CLOSED
25	X		CAR 25: The PP is requested to amend the section Section A “Description of project activity” of the PDD: 1.- The biomass residues from industry- The agave bagasse will be utilized in this project. Please revise the sentence “The proposed project	4.1	<ol style="list-style-type: none"> 1) The sentence has been revised. The term forestry and agricultural residues has been revised in the whole document for consistency. 2) The description of the 	<ol style="list-style-type: none"> 1.- The sentence has been correctly amended by the PP. 2.- Description of the equipment that existed before the implementation has been added in section A.3 of the latest version of PDD. 3.- As per indicated in section A.3 of the latest version of PDD the heat generation equipments considered within the boundary of the project activity are the two mentioned Maerz kilns: of the already existing 400 tpd (that started operations on December of 2009)) to be

		<p>activity consists in the utilization of biomass residues (agricultural and forestry)---".</p> <p>2.- Detailed information for the existing technology, equipment, operation date and so on, shall be provided.</p> <p>3.- One of Maerz kilns with 600 tpd is the new one, status of the third are shall be indicated prior to the project activity.</p> <p>4.- Technical parameters of the retrofit and new installed Maerz kilns, shall be indicated.</p> <p>5.- Please update the version of "Project and leakage emissions from road transportation of freight" to 01.1.</p> <p>6.- Some applicability criteria of methodology were not demonstrated including "The heat generated in the heat generation equipment is ---", "The use of biomass residues or increasing the use of biomass residues beyond historical levels is technically not possible at the project site without a significant capital investment in: ---". Please amend the section B.2 against the "Applicability" in AM0036 Version 04.</p>		<p>equipments that existed before the implementation of the project activity has been enhanced in the section A.3 of the PDD.</p> <p>3) The project activity only includes two kilns, one with an installed capacity of 400 tpd and other of 600 tpd. The first kiln's commissioning date was on December 2009, meanwhile the commissioning date for the second was on April 2012. No third kiln is included in this project activity.</p> <p>4) The technical specs for both kilns have been added in section A.3 of the PDD version 8 (P115_VAL_340).</p> <p><u>Further request from the DOE 1:</u> Technical specification of the retrofit and new installed Maerz kilns are still missing, e.g thermal design and heat consumption shall be indicated</p>	<p>retrofitted for the use of forestry and agricultural residues, and the new Maerz kiln of 600 tpd (that started operations on April of 2012) already enabled with the option of the use of use of forestry and agricultural residues, this in accordance with the letter provided by the manufacturer maerz dated on April 15, 2013.</p> <p>4.- Technical specification of the retrofit and new installed Maerz kilns have been added in the section A.3 of the latest version of the PDD, and it has been correctly assessed by the audit team.</p> <p>5.- "Project and leakage emissions from road transportation of freight" has been correctly updated to the latest version 01.1. as required.</p> <p>6.- The information regarding the referred applicability condition has been enhanced such as in PDD section B.2 as well as FVR, stating that No substantial changes are expected to occur in the process derived from the use of biomass residues, neither in the processing capacity of raw input nor in the product's final specifications".</p> <p>7.- Section A.3 has been amended in the latest version of the PDD.</p> <p>8.- Version of the tool "Emissions from solid waste disposal sites has been amended in accordance with the latest version available 06.0.1.</p> <p>9.-</p> <p>a) Based on the information provided by the PP, the agave bagasse is the residue from the tequila production process. Hence the utilization of biomass residues has been defined as (forestry residues and agroindustrial residues as agave bagasse, sugar cane bagasse and forage maize).</p> <p>b) As was correctly addressed in the latest version of the PDD The heat generated in the kilns included in this project activity is not and will not be used for power generation, since it will be transferred directly for the clinker manufacturing process.</p>
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			<p>7.- As per section A3, the pre-treatment such as grinding and pulverization will be done in the project site, please check “a mechanical treatment at the supplier’s facilities”.</p> <p>8.- The latest version of the tool “Emissions from solid waste disposal sites” is 06.0.1.</p>	<p>in section A.3. The PP is requested to refer the technical sheet from the manufacturer to add the main technical parameters in the PDD.</p> <p>Further response from PP: Additional technical information included in the Maerz kiln brochure has also been included in section A.3 of the PDD version 9.0 (page 11 of file P115_VAL_344). The reference of the section of the brochure where the information can be found has also been included. Additionally, the kiln’s brochure is delivered to the DOE through the file P115_VAL_178.</p> <p>5) The referred tool has been updated to its latest version (01.1.0) in the PDD version 8 (P115_VAL_340).</p> <p>6) Section B.2 of the PDD V.8 (P115_VAL_340) has been revised and corrected.</p> <p>Further request from the</p>	<p>c) As per letter from the manufacturer maerz dated on April 15th 2013, December of 2009 refers to the commissioning date of the 400 tpd kiln. No retrofit has been performed since the project activity has not begun yet.</p> <p>d) The term “Agricultural” has been enhanced to “Agroindustrial” in the PDD and the Emissions Reduction and Financial Analysis spreadsheet.</p> <p>Hence the CAR is CLOSED.</p>
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				<p><u>DOE 2:</u> As per addressed in the PDD “No substantial changes are expected to occur in the process derived from the use of biomass residues”. Nevertheless, the applicability criterion- “For projects that use biomass residues from a production process (e.g. production of sugar or wood panel boards ----” is applicable for this project because the agave bagasse which was from a production process will be utilized. Hence the PP is requested to clarify or justify it with evidence.</p> <p><u>Further response from PP:</u> The information regarding the referred applicability condition has been enhanced in section B.2 (file P115_VAL_344) as follows “<i>No substantial changes are expected to occur in the process derived from the use of biomass residues, neither in the processing capacity of raw input nor in the product’s final specifications</i>”.</p> <p>7) The sentence has been removed.</p>	
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					<p>8) The version of this tool has been revised and corrected in the entire PDD V.8 (P115_VAL_340).</p> <p><u>Further request from the DOE 3:</u></p> <p>a) Further clarification is required from the PP whether the agave bagasse belongs to agricultural or industrial residues. The PP is requested to states clearly if the date to start operation on December of 2009 is the retrofit date or the existing kiln with 400 tpd operation date.</p> <p>b) The explanation “As will be analyzed in the step 2 of section B.5, a significant investment is required (approximately 5.4 MMUSD) ---- conditioning to be used as fuel.” is not for applicability criterion “The heat generated in the heat generation equipment is: Not used for power generation; or If power is generated -</p>	
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					<p>---the project activity, i.e.: a)----, b)-----</p> <p>c) Please demonstrate the remaining lifetime of retrofit equipment 400 tdp kiln for the applicability criterion “in case of ----should be used to determine the point in time until which CERs can be claimed.”</p> <p>d) The agave bagasse is from the production process of tequila which is industrial residues rather than agricultural residues. But only for agroforestry Processing Waste has been provided. Hence please provide relevance source for industrial residues.</p> <p><u>Further response from PP (3):</u></p> <p>a) The agave bagasse is the residue from the tequila production process. Initially, the juice is extracted from the agave through a mechanical</p>	
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				<p>process, resulting in the bagasse which remains as residue and the juice that continues the process for the tequila production.</p> <p>b) “The heat generated in the kilns included in this project activity is not and will not be used for power generation, since it will be transferred directly for the clinker manufacturing process.”, as can be found in section B.2.</p> <p>c) December of 2009 refers to the commissioning date of the 400 tpd kiln (please refer to the supplier’s letter, file P115_VAL_316). No retrofit has been performed since the project activity has not begun yet.</p> <p>d) The response has been revised and corrected to Please refer to the latest response of CAR 14, where the remaining lifetime of the 400 tpd kiln has been determined. The change of the burning system to enable the use of biomass residues as fuels will not affect the operational lifetime of this kiln. Regarding the 600 tpd kiln, from the starting date (December of 2013) of the project it will have a remaining lifetime of 33</p>	
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					<p>years (taking into consideration the commissioning date of the kiln, April of 2012). The response regarding this applicability condition has been revised/enhanced in section B.2.</p> <p>e) The term “Agricultural” has been changed to “Agroindustrial” in the PDD and the Emissions Reduction and Financial Analysis spreadsheet, to refer to the agave bagasse residues included in the project activity. The references are still the same and the correspondent data continues without changes referring to the very same biomass residue.</p>	
26		X	<p>CL 26:</p> <p>a) The PP is requested to clarify the meaning of “the firsts Maerz PFR-kilns”. Does it mean the first one which manufactured by the same supplier and used in other plant?</p> <p>b) Both kilns (the 400 tpd kiln to be retrofitted and the new 600 tpd kiln), have recently started operations, 2010 and 2012 respectively. Hence the PP is requested to clarify how</p>	4.1	<p>a) This section has been extracted from the section 8.1 of the technical brochure of the same type of Maerz kiln (refer to file P115_VAL_178) in order to state that the expected operational lifetime of both kilns (400 tpd and 600 tpd) is 35 years, and since both started operations recently (December of 2009</p>	<p>a) The meaning of “the firsts Maerz PFR-kilns” has been clarified by the PP where it’s clearly stated that this section has been extracted from the section 8.1 of the technical brochure of the same type of Maerz kiln (refer to file P115_VAL_178).</p> <p>b) The historical information for the production and fuel consumption of both kilns (included in the sheet “historical data” of file P115_VAL_341) has been amended to refer only the 2008 -2010 periods. Information data from 2008-2012 has been presented exclusively as historical reference, of fuel used in the plant.</p>

			<p>can be assessed the historical production and fossil fuels consumption through production records covering 2008, 2009, 2010, 2011 and 2012.</p>	<p>and April 2012, refer to file P115_VAL_316), both will be able to complete at least the whole life of the project activity (20 years).</p> <p>b) The historical information for the production and fuel consumption of both kilns (included in the sheet “historical data” of file P115_VAL_341) has been corrected to correspond only for the 2008- 2010 period. The information from 2008- 2010 has been used exclusively as evidence of the fuels used in the plant, which are the same that would be used in all of the kilns of the plant in absence of the project activity.</p> <p>Further response from PP:</p> <p>Additional technical information included in the Maerz kiln brochure has also</p>	
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					been included in section A.3 of the PDD version 9.0 (file P115_VAL_344). The reference of the section of the brochure where the information can be found has also been included. Additionally, the kiln's brochure is delivered to the DOE through the file P115_VAL_178.	
27	X		<p>CAR 27: The PP is requested to amend the following inconsistencies in the PDD:</p> <p>1.- Please indicate "the related equipment at the project site" which included in the project boundary (several main equipment).</p> <p>2.- Please indicate the emissions from fossil fuels co-fired in the heat generation equipment were not included in project emission.</p> <p>3.- The case B2 was not involved in this project activity, but "The site where the biomass residues would have been left for decay under anaerobic conditions." was included in the spatial extent of the project boundary, please check it.</p> <p>4.- As per step 3 of the "Tool for demonstration and assessment of</p>	5.3	<ol style="list-style-type: none"> 1. The description of the equipments at the project site has been enhanced in Section B.3 "Project Boundary" of the PDD V.8 (P115_VAL_340). 2. The emissions were not included since the methodology AM0036 V.4 requires not to, as can be seen in the description of the parameter $PE_{CO_2,FF,y}$: "<i>This should <u>not include fossil fuels co-fired in the project heat generation equipment</u></i>", additionally it states that "<i>where j should include all processes of fuel combustion that</i> 	<p>1.- Description of the equipment at the project site have been added in the spatial extent of the project boundary.</p> <p>2.- As per approved methodology AM0036 / Version 04.0.0 The parameter $PE_{CO_2,FF,y}$ corresponds to $PE_{FC,j,y}$ in the tool, where j should include all processes of fuel combustion that are attributable to the project activity, such as for on-site transportation or treatment of the biomass residues. This should not include fossil fuels co-fired in the project heat generation equipment.</p> <p>3.- Section B.3 of the latest version of the PDD has been amended in order to be consistent with the case B2.</p> <p>4.- Section B.3 of the latest version of the PDD has been corrected in accordance with the methodology AM0036 V.4 and the "Tool for the demonstration and assessment of additionality" V.7.0.0.</p> <p>5.- Definition of alternative scenarios to the project activity has been made in the section B.4. and is continued in step 3 all the alternatives have been assessed according to the "Tool for the demonstration and assessment of additionality" V.7.0.0, also as requested by the methodology.</p> <p>6.- As per letter from the manufacturer Maerz the commissioning date of Maerz kilns: of the already existing 400 tpd (that started operations on December of</p>

		<p>additionality”, the barrier what would prevent the implementation of the proposed CDM project activity and then show the identified barriers would not prevent the implementation of at least one of the alternatives. For this project, alternatives for heat generation and the use of biomass residues were identified as per AM0036, so all barriers for heat generation and the use of biomass residues shall be listed separately.</p> <p>5.- The sub-step 2b is to show which alternatives for heat generation and the use of biomass residues are prevented by at least one of the barriers previously identified in step 2a and eliminate those alternatives from further consideration. All alternatives shall be evaluated for a common set of barriers in step 2a.</p> <p>6.- The H5 was defined as the most plausible baseline scenario-Continued operation of the existing unit(s) using the same fuel mix or less biomass residues as in the past AND installation of new heat generation equipment that is/are fired with the same fuel type(s) and the same fuel mix (or a lower share of biomass) as the existing equipment. However, from section A.3, it seems two Maerz kilns (one of 400 tpd and other of 600 tpd) were installed prior to project</p>	<p><i>are attributable to the project activity, such as for <u>on-site transportation or treatment of the biomass residues</u>”.</i></p> <p>3. This has been corrected in section B.3 “Project boundary” of PDD V.8 (P115_VAL_340).</p> <p>4. Section B.4 has been revised and the listing of the alternatives to the project activity has been detailed and performed separately according to the methodology AM0036 V.4 and the “Tool for the demonstration and assessment of additionality” V.7.0.0.</p> <p>5. All the alternatives for heat generation and for the use of forestry and agricultural residues have been listed in step 1 in section B.4, according to what is stated by AM0036 V.4, while in step 2 “Barrier analysis to</p>	<p>2009) to be retrofitted for the use of forestry and agricultural residues, and the new Maerz kiln of 600 tpd (that started operations on April of 2012) already enabled with the option of the use of forestry and agricultural residues. Hence as per assessed by the audit team in the project activity no biomass residue would be able to be consumed since no equipment for its pretreatment, transport and feeding to the kilns could be installed, being why the same fuels would be used in the plant, more likely in the same proportion. Hence,</p> <p>7.-</p> <p>a) Referred sentence has been added in section “B.6” subsection of CO₂ emissions from on-site fossil fuel combustion (PE_{CO2,FF,y}).</p> <p>b) Explanation has been added in section “B.4” “Subsection B.1” “sub-step 2.b”, stating clear that the fuel mix that would be consumed by both kilns (the 400 tpd and the 600 tpd), if the project does not get implemented.</p> <p>The CAR is CLOSED.</p>
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			<p>activity. Additionally, please demonstrate the new installed Maerz kilns with 600 tpd would fire with the same fuel type(s) and the same fuel mix as the existing equipment in the absence of project activity.</p>		<p><i>eliminate alternatives to the project activity that face prohibitive barriers” all of the alternatives have been assessed according to the “Tool for the demonstration and assessment of additionality” V.7.0.0, also as requested by the methodology.</i></p> <p>6. The first installed Maerz kiln started operations on December of 2009, and is not capable of using biomass residues without the installation of the proper burner (Maerz kit) and the required transport system for the feeding of biomass residues. On the other hand, the second kiln (new 600 tpd) has started on April 2012 and has been bought fully equipped to be able to consume biomass residues, nevertheless, it also requires the biomass pretreatment equipment and the</p>	
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					<p>transport system included as part of this project activity. Even when both kilns have started operations before the “starting date” (expected to take place by the end of 2013) of the project, the CDM incentives were considered for the acquisition of the 600 tpd, qualifying in the 4th scenario of project activities in the methodology). Finally, in absence of the project activity no biomass residue would be able to be consumed since no equipment for its pretreatment, transport and feeding to the kilns could be installed, being why the same fuels would be used in the plant, more likely in the same proportion.</p> <p><u>Further request from the DOE:</u></p> <p>a) The PP is requested to indicate “CO₂ emissions from on-site</p>	
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				<p>fossil fuel and electricity consumption attributable to the project activity” does not include fossil fuels co-fired in the heat generation equipment as per AM0036.</p> <p>b) In order to comply with H5 situation, the explanation shall be done that the installation of new heat generation equipment 600tpd kiln would be fired with the same fuel types as the 400 tpd kiln if there is no the proposed project. In doing so, please explain this issue from national regulation and common practice.</p> <p>Further response from PP:</p> <p>a) The referred sentence has been added in section “B.6” subsection of “Project Emissions” clause “a”.</p> <p>b) The requested explanation has been added in section</p>	
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					<p>“B.4” “Subsection B.1” “sub-step 2.b”, making clear that the fuel mix that would be consumed by both kilns (the 400 tpd and the 600 tpd), if the project does not get implemented, would be the same as the one used in the past until now.</p>	
28	X		<p>CAR 28: The PP is requested to amend the following inconsistencies in the PDD:</p> <p>1 Please indicate the benchmark is pre-tax or post-tax.</p> <p>2 Please indicate the 12.93% and 12.2% are project or equity benchmark.</p> <p>3 Please indicate all input parameters in PDD for IRR calculation of IRR spreadsheet.</p> <p>4 Please check the “% of variation” for four input parameters of sensitivity analysis in PDD and IRR spreadsheet which is different.</p> <p>5 Please demonstrate it is unlikely for the IRR to reach the benchmark as per the historical tendency.</p> <p>6 The barrier analysis was applied in baseline determination but it was not applied for additionality assessment.</p> <p>7 The step 2 of common practice</p>	7.3	<ol style="list-style-type: none"> 1. The selected benchmark is after taxes, as can be seen in paragraph 8, page8 of the “Guidelines on the assessment of investment analysis” V.5. The calculation of the Equity IRR in the economic model (file P115_VAL_341) has been calculated also after taxes. 2. As can be seen in the economic model and the PDD v.8, both benchmark alternatives (12.93 and 12.2%) are equity benchmarks, and the lowest has been chosen as a conservative approach. The term “equity” has been added in the “Investment analysis” in order for 	<p>1.- As per correctly defined in the “Guidelines on the assessment of investment analysis” version 05”, defines 12.2% as a default value for the expected return on equity after taxes for Mexico. Also this information has been correctly stated in the PDD.</p> <p>2.- As per correctly addressed in the PDD benchmark alternatives (12.93 and 12.2%) have been set as equity IRR.</p> <p>3.- Input parameters are correctly stated in Sub-step 2C within section B.5.</p> <p>4.- “% of variation” for four input parameters is in accordance with the break-even analysis which has been conducted in order to obtain the values of the variables listed above that allow the project to reach the benchmark. This information is in line with the IRR spreadsheet.</p> <p>5.- A further break-even analysis has been conducted by the PP to get the values of the main input values such as investment, fossil fuel price, biomass price and project activity price.</p> <p>6.- Barrier analysis has been added in section B.4 of the latest version of PDD.</p> <p>7.- The common practice analysis has been corrected in accordance with the Guidelines on Common Practice version 02.0.</p> <p>The CAR is CLOSED.</p>

			<p>analysis is to identify similar projects (both CDM and non-CDM) which fulfil all of the following conditions (a)-(f). The condition-None of those plants are undergoing the registration process as CDM project activities is defined in step 3. Additionally, 8 plants have not used biomass residues as alternative fuel which does not fulfil the condition (b). Therefore, they are not the similar projects in step 2. The similar projects should be 0 if the information source is substantiated.</p>		<p>clarification.</p> <ol style="list-style-type: none"> 3. Relevant information for the investment analysis has been added in Sub-step 2C within section B.5. 4. The % of variation in the financial model and the PDD has been revised. 5. The required analysis (breakeven analysis) has been updated in Sub-step 2d. "Sensitivity Analysis". 6. This has been revised and corrected in the outcomes of sub-steps 2a and 2b within section B.4 and finally concluded in step 3 "Barrier analysis" within section B.5. 7. The common practice analysis has been revised and corrected. Please refer to step 4 "Common practice analysis" within section B.5 of the PDD V.8 (P115_VAL_340). 	
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29	X		<p>CAR 29: The Depreciation and Amortization cannot be taken account for cash-out flow for equity IRR calculation in IRR spreadsheet. Hence the PP is requested to clarify or correct the financial spreadsheet accordingly.</p>	7.3	<p>According to the “Guideliness on the assessment on investment analysis” V.5:</p> <p>1. <i>“Depreciation, and other non-cash items related to the project activity, which have been deducted in estimating gross profits on which tax is calculated, should be added back to net profits for the purpose of calculating the financial indicator (e.g. IRR, NPV). Taxation should only be included as an expense in the IRR/NPV calculation in cases where the benchmark or other financial indicator is intended for post-tax comparisons”.</i></p> <p>2. <i>“In such calculations cost of servicing debt (interest and principle payments) are considered as costs.”</i></p> <p>According to the latest, depreciation should not be taken out from the cash flow and equity IRR calculation, nevertheless, the payment to principal (corresponding to Amortization) is considered as cost since only the equity % of the investment is taken into account in year 0 (“investment”). The financial spreadsheet includes both</p>	<p>a) The PDD and the financial model have been correctly amended revised in order to include exclusively the default benchmark allowed by the Guidelines on the Assessment of Investment Analysis of the UNFCCC (12.2%).</p> <p>b) According to the “Guideliness on the assessment on investment analysis” V.5, only the portion of equity (50%) has been considered in the investment in year 0. Additionally, the cost of serving debt (amortization in row 16 and interests in rows 19, 20 and 21) are considered only as costs, and not as part of the investment in year 0.</p> <p>c) The calculation of the Project IRR with and without CERs has been removed from the latest version of the economic model.</p> <p>Hence the CAR is CLOSED.</p>
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				<p>parameters in the equity IRR calculation, please refer to the file P115_VAL_341.</p> <p><u>Further request from the DOE</u></p> <p>a) The PP is requested to clarify why the benchmark of 12.93% has been refereed in the PDD, when a default value 12.2% for the expected return on equity has been applied by the PP in accordance with the appendix of the “Guidelines on the assessment of investment analysis” version 05.</p> <p>b) The Equity with CERs tab in the Investment Analysis spreadsheet takes into consideration the portion of investment costs financed with debt (rows 19, 20 and 21 refer to interest, initial balance and final balance, respectively). Hence, as per Guidelines on</p>	
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					<p>the Assessment of Investment Analysis paragraph 10 the Project participant must take into consideration only the portion of investment costs that is financed with equity.</p> <p>c) The PP is requested to clarify why the calculation of Project IRR with CERs and without CERs has been added Investment Analysis spreadsheet, when the financial analysis and the PDD are based on Equity IRR.</p> <p>Further response from PP:</p> <p>a) The PDD (P115_VAL_344) and the economic model (P115_VAL_345) have been revised in order to include exclusively the default benchmark allowed by the Guidelines on the Assessment of Investment Analysis of the UNFCCC (12.2%).</p> <p>b) The rationale of the point 10 of the</p>	
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				<p>Guidelines on the Assessment of Investment Analysis mentions the following: “The purpose of the equity IRR calculation is to determine the final return on the initial equity investment. In such calculations cost of servicing debt (interest and principle payments) are considered as costs. Therefore to consider all investment costs to be a cash outflow would double count the cost of debt to the equity investor.”</p> <p>The latest statement has already been considered and followed accordingly in the economic model since only the portion of equity (50%) has been considered in the investment in year 0. Additionally, the cost of serving debt (amortization in row 16 and interests in rows 19, 20 and 21) are considered only as costs, and not as part of the investment in year 0, since it would be double counting of</p>	
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					<p>the cost of debt. The DOE is requested to review the calculation within the economic model (file P115_VAL_345) in order to witness that no double counting is being incurred.</p> <p>c) The calculation of the Project IRR with and without CERs has been discarded from the latest version of the economic model (P115_VAL_345).</p>	
30	X		<p>CAR 30: The PP is requested to amend the following inconsistencies in the PDD:</p> <p>a) Please select the calculation method (option A or B) of CO₂ emissions from on-site fossil fuel combustion as per the “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion” and indicate the formula on this page.</p> <p>b) Please update $EF_{km,CO_2,y}$ to $EF_{CO_2,f}$ as per the methodological tool “Project and leakage emissions from road transportation of</p>	5.5	<p>a) The selected method (option B) and its correspondent equation has been added in section B.6.1 for the parameter $PECO_{2,FF,y}$.</p> <p><u>Further request from the DOE</u> Formula has been added. However, the chosen method (B) shall be indicated as a conclusion, to ensure the selected method by the PP.</p> <p><u>Further response from PP:</u> In order to add clarity and conclude in the use of option B, the following statement has been included for the referred</p>	<p>a) The project participants have chosen to calculate the CO₂ emission coefficient $COEF_{i,y}$ through the Option B of the “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion and has been correctly addressed in the latest version of the PDD.</p> <p>d) Parameter $EF_{CO_2,f}$ has been updated in accordance with the tool “Project and leakage emissions from road transportation of freight” version 01.1.0.</p> <p>b) Concept of forestry residues and agricultural residues has been amend through all the document.</p> <p>Hence the CAR is CLOSED.</p>

			<p>freight” version 01.1.0</p> <p>c) From section B.6.3-Leakage, the investigation of biomass residues includes residues from forestry, Agave, sugar cane bagasse and forage maize. But in section A.3, The agave bagasse, residue from the production process of tequila, is one of the main biomass residues considered for the project, but also other agro industry and forestry residues are consider. Please clarify and keep consistent in context.</p>		<p>parameter in section B.6.1:</p> <p><i>“For the current project activity, the project participants have chosen to calculate the CO2 emission coefficient $COEF_{i,y}$ through the Option B of the “Tool to calculate project or leakage CO2 emissions from fossil fuel combustion”, represented by the following equation:</i></p> $COEF_{i,y} = NCV_{i,y} \times EF_{CO2i,y}$ <p><i>”.</i></p> <p>b) The tool, and the comprehended equations and variables, have been updated to the version 1.1.0.</p> <p>c) The concept of forestry residues and agricultural residues has been revised and corrected in the whole document and financial model to keep consistency.</p>	
31		X	<p>CL 31: The PP is requested to clarify the following issues in the ERs spreadsheet.</p> <p>1.- As per the annual production</p>	4.1	<p>1. The increase in production is due to the commissioning of the 2nd Maerz kiln, the new with capacity of</p>	<p>1.- Based on the letter from Maerz dated on April 15, 2013 the increase in the historical data for Maerz kilns production in 2012 has been clarified.</p> <p>2.- Based on the clarification from the PP where the agricultural residues comprehend (forestry residues and</p>

			<p>capacity of Maerz kilns 1 with 400tpd which was only operated prior to project activity, it is only 136,000 tonnes, however, the historical data for Maerz kilns production in 2012 is 242, 534 tonnes. Please clarify it.</p> <p>2.- As per section A.3, the agave bagasse, residue from the production process of tequila, is one of the main biomass residues considered for the project, but in the sheet of <Input Data>, the rate of agricultural residues is 55%.</p>		<p>600 tpd. While during 2010 and 2011 and the first quarter of 2012 the only operative kiln was the one of 400 tpd, from April to December of 2012 both were already in operation totalizing an installed capacity of 1000 tpd.</p> <p>2. The agricultural residues comprehend agave bagasse, sugar cane bagasse and forage maize, generating the mix required to supply the 55% forecasted for the project activity. The clarification has been included in section A.1.</p>	<p>agricultural residues as agave bagasse, sugar cane bagasse and forage maize), the rate of agricultural residues is 55% has been correctly clarified and assessed by the audit team.</p> <p>The CL is CLOSED.</p>
32	X		<p>CAR 32: The PP is requested to correct or clarify the following issues in the PDD:</p> <p>1 The purpose of moisture content of the biomass residues is to calculate the baseline emission rather than project emission.</p> <p>2 The parameter $FC_{i,y}$ is only for</p>	9.1	<p>1. The purpose of the parameter has been corrected to baseline emissions calculation.</p> <p>2. The quoting to the referred tool has been removed for the $FC_{i,y}$ parameter within section B.7.1 “Data and parameters to be monitored” to be in</p>	<p>1.- The purpose of moisture content of the biomass residues has been enhanced to calculated baseline emissions instead project emissions.</p> <p>2.- The parameter $FC_{i,y}$ has been amended in the latest version of the PDD and it has been correctly assessed by the audit team.</p> <p>3.- A statement has been indicated in section of project emissions that $EF_{CO_2,LE}$ is not applicable Since no categories of forestry and agricultural residues for which B4, B5, B6, B7 or B8, have been identified as the baseline scenario for the proposed project activity.</p> <p>4.- Parameter “Demonstration that the biomass residue</p>

		<p>baseline emission calculation, so “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion” is not applicable for it. To monitor on-site fossil fuel combustion for project emission, please insert another one in table.</p> <p>3 EFCO₂,LE is not applicable for this project because the baseline scenario is not B4-B8.</p> <p>4 The parameter “Demonstration that the biomass residue type k from a specific source would continue not to be collected or utilized“ is not applicable for this project because the approach L2 in previous version 03 was applied for demonstration of no leakage in this project.</p> <p>5 Please insert the monitored parameter for calculation of CO₂ emissions from on-site fossil fuel combustion as per selected option A or B on page 28 and the “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion”.</p> <p>6 Please define the accuracy or measurement arrange of all monitoring equipment.</p>		<p>accordance with the methodology AM0036. An extra table has been added as requested.</p> <p><u>Further request from the DOE:</u> The purpose of data F_{CI,y} Quantity of fossil fuel type i fired in all heat generation equipment at the project site during the year y is to calculate baseline emission rather than project emission. Hence the PP is requested to correct this parameter accordingly.</p> <p><u>Further response from PP:</u> Response missing</p> <p>3. The referred comment has been included in the PDD for EFCO₂,LE for the leakage description within section B.6.1.</p> <p>4. The mentioned parameter has been removed.</p> <p>5. The requested parameter and the correspondent equations have been</p>	<p>type k from a specific source would continue not to be collected or utilized“ has been removed from the section B.7.1 of the latest version of PDD.</p> <p>5.- Parameter CO₂ emissions from on-site fossil fuel combustion has been added in section in section B.6.1.</p> <p>6.- Considering that the technical specification, uncertainty levels, methods and the associated accuracy level of measuring instruments to be used for various parameters and variables could vary for the definitive equipment installed for the monitoring and verification stage, a FAR has been raised from DOE, in order that the verifying DOE assess during 1st verification process if the monitoring equipment actually installed has at least the same or better accuracy level than the one stipulated in the applied methodology and/or in the registered monitoring plan, this in accordance with Clean development mechanism project Standard version 03.0 section 3, thus response is accepted by the validation team.</p> <p>7.- Parameters for calculation CO₂ emissions from on-site fossil fuel combustion, i.e. NCV_{i,y} and EFCO_{2i,y} have been added in section B.7.1 accordingly.</p> <p>The CAR is CLOSED.</p>
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					<p>included.</p> <p>6. Only general specs of the measurement equipments have been included in section B.7.1 of the PDD since more detailed information is likely to vary by the verification stage.</p> <p><u>Further request from the DOE 2:</u> As per Clean development mechanism project Standard version 07.0 section 7.2.8 the monitoring plan shall include uncertainty levels, methods and the associated accuracy level of measuring instruments to be used for various parameters and variables. Hence the PP is requested to amend the MP in order to be in line with the selected methodology and all other applicable CDM rules and requirements.</p> <p><u>Further response from PP:</u> 2. The table corresponding to the referred parameter has been corrected as requested.</p>	
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					<p>6. Additional information regarding the equipments to be used for the monitoring of the project activity has been added in section "B.7.1. Data and parameters to be monitored" (refer to file P115_VAL_344).</p> <p><u>Further request from the DOE 3:</u></p> <p>Two parameters shall be monitored for calculation CO₂ emissions from on-site fossil fuel combustion, i.e. $NCV_{i,y}$ and $EF_{CO2i,y}$ as per equation (7).</p> <p><u>Further response from PP (3):</u></p> <p>The requested parameters have been added in section B.7.1.</p>	
33		X	<p>CL: 33</p> <p>In accordance with the CDM VVS version 07.0 paragraph 122 part a) "the FSR is the basis for the decision to proceed with the investment in the project, i.e. that the period of time between the finalization of the FSR and the investment decision is sufficiently short that it is unlikely in the context of the underlying project activity that the input values would have materially changed". Hence the</p>	7.3.5	<p>As stated in this CL, the document does not consider economical (financial) information related with the project; it actually is a descriptive document about the objectives of the project activity and is not a Feasibility Study Report. In addition to the latest, the first part of the quoted paragraph from the CDM VVS states the</p>	<p>Based on the answer correctly provided by the PP, the document dated on 04-11-2011 cannot be considered as a feasibility study report (FSR, due to such document does not contain at least the legal, economic technological, scheduling and other factors, applicable at the time of investment decision. Hence a new investment decision date has been adopted 20-10-2010 and correctly assessed by the audit team, all the financial references were adjusted in the PDD in order to be in line with the new adopted investment decision date. Thus CL is CLOSED.</p>

		<p>PP shall clarify the significant difference of time between the original date of the Feasibility Study Report (FSR) 04-11-2011 and the new adopted date of the investment decision 20-10-2010. Furthermore, a clarification is required in how the values used in the PDD and associated annexes are fully consistent with the FSR, and how this report has considered at least the legal, economic technological, scheduling and other factors, applicable at the time of investment decision.</p>	<p>following:</p> <p>“Where project participants rely on values from Feasibility Study Reports (FSR) that are approved by national authorities for proposed project activities, the DOE shall determine whether:”</p> <p>Since this document does not qualify as FSR and is not approved by any national authority, the management decision date has been changed to the correspondent to the “turnkey project’s quotation”, with date of October 20th of 2010 (P115_VAL_364).</p> <p>To avoid any misinterpretation or confusion (considering that the document was not used for the elaboration of the economical analysis), all references to said document have been eliminated from the PDD.</p>	
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Table 3: List of forward action requests (FARs)

Validation / Verification Standard

(27) The DOE shall raise a forward action request (FAR) 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.

FAR number	Reference	Summary of project owner response	Validation team conclusion
FAR 1 During the Validation stage the project is in early stage of its implementation, thus as per addressed in the monitoring plan added in the PDD, technical specification e.g. uncertainty levels, methods and the associated accuracy level of measuring instruments to be used for various parameters and variables could vary for the definitive equipment installed for the monitoring and verification stage. Hence the verifying DOE shall assess during 1 st verification process if the installed monitoring equipment has the same or better accuracy level than the one stipulated in the registered monitoring plan, this in accordance with Clean development mechanism project Standard version 07.0 section 3.	9.1	As stated by the DOE, due to the project's current implementation stage, information related to the monitoring equipment that is most likely to be installed has been added. The definitive technical specifications of the monitoring equipments will be updated once the project gets implemented and during the first verification process.	Verifying DOE shall assess during 1 st verification process if the installed monitoring equipment has the same or better accuracy level than the one stipulated in the registered monitoring plan, this in accordance with Clean development mechanism project Standard version 07.0 section 3.
FAR 2 As correctly stated in the PDD the biomass residues to be used as part of the project activity do not qualify as a hazardous material or hazardous residue, being why no additional permits to the ones needed for the normal operation of the quicklime plant are required. Nevertheless, for the project activity to become operational, it will be required the update of the Unique Environmental License issued by SEMARNAT. Hence the verifying DOE shall assess during 1 st	9.1	"The updated Unique Environmental License issued by SEMARNAT will be delivered to the DOE during the first verification period".	Verifying DOE shall assess during 1 st verification process if the Environmental License has correctly been issued, by the federal entity SEMARNAT.

verification process the update of the Unique Environmental License issued by SEMARNAT.			
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Appendix B

Certificates of Competence

Qualification

Lemus Martinez-Estape, Rafael Arturo /

Emission Trading

United Nations Framework Convention on Climate Change

Auditor No.:

(AuditorenRegNr)

Appointed:
(Zugelassen)



a

Qualification Level:
(Qualifikationsstufe)

Lead Auditor

External:
(Externer)



a

Add. reviewer:
(Zusätzlicher Prüfer)

☐ yes

EAC Scopes:
(EAC Branchen)

CDM 01 - Energy industries (renewable - / non-renewable sources)
CDM 13 - Waste handling and disposal

Add. qualification:
(zus. Qualifikation)

First Appointment:
(Erstberufung)

08/05/2014

Valid to:
(Gültig bis)

07/05/2017

Remarks:

Valid for TA 1.2, 13.1

Languages:

Spanish
English

Experience Exchange

Date

Location

Remarks

Accreditation(s)

Monitoring

Latest Monitoring:
(letzte Beurteilung)

Next Monitoring:
(nächste Beurteilung)

Remarks:

[View / Edit Monitoring](#)

History of scope allocation

Date: 2011-07-07
Change: EAC CDM, CDM added
By: Manfred Brinkmann
Reason: Valid for TA 1.2, 13.1

History

Created:	06/30/2011 09:08:28 AM CDT	Luis Javier Cerecedo/Mex/TUV
Modified:	07/18/2014 10:16:13 AM	Henri Phan/Chn/TUV
	05/10/2012 03:39:17 PM CDT	Arturo Lemus/Mex/TUV
	05/10/2012 03:35:53 PM CDT	Arturo Lemus/Mex/TUV
	05/08/2012 03:53:10 PM CDT	
	05/03/2012 10:33:34 PM	
	07/07/2011 03:42:19 PM ZE9	
	07/07/2011 03:39:54 PM ZE9	
	06/30/2011 09:08:42 AM CDT	

Export to ICMS

Last Export:

Qualification

Avendaño Reyes, Guadalupe /

Emission Trading

United Nations Framework Convention on Climate Change

Auditor No.:
(AuditorenRegNr)

Appointed:
(Zugelassen)

☒ ja

Qualification Level:
(Qualifikationsstufe)

Lead Auditor

External:
(Externer)

☐ ja

Add. reviewer:
(Zusätzlicher Prüfer)

☐ yes

EAC Scopes:
(EAC Branchen)

CDM 01 - Energy industries (renewable - / non-renewable sources)
CDM 13 - Waste handling and disposal

Add. qualification:
(zus. Qualifikation)

First Appointment:
(Erstberufung)

04/03/2010

Valid to:
(Gültig bis)

01/03/2016

Remarks:

Valid for TA 1.2, 13.1

Languages:

Spanish
English

Experience Exchange

Date

Location

Remarks

Accreditation(s)

Monitoring

Latest Monitoring:
(letzte Beurteilung)

Next Monitoring:
(nächste Beurteilung)

Remarks:

[View / Edit Monitoring](#)

History of scope allocation

Date: 2010-03-05
Change: EAC CDM, CDM, CDM added
By: Manfred Brinkmann
Reason:

History

Created:	28/01/2010 08:30:36 a.m.	Luis Javier Cerecedo/Mex/TUV
Modified:	06/03/2013 10:23:15 a.m. ZE8	Praveen Urs/Chn/TUV
	04/02/2011 11:52:14 a.m. ZE9	Manfred Brinkmann/Jpn/TUV
	04/02/2011 11:51:58 a.m. ZE9	Manfred Brinkmann/Jpn/TUV
	04/02/2011 11:49:32 a.m. ZE9	
	14/09/2010 03:59:20 p.m. ZE9	

Export to ICMS

Last Export:

Qualification

Ma, Libo /

Emission Trading

United Nations Framework Convention on Climate Change

Auditor No.:
(AuditorenRegNr)

Appointed:
(Zugelassen)

☒ ja

Qualification Level:
(Qualifikationsstufe)

Lead Auditor

External:
(Externer)

☐ ja

Add. reviewer:
(Zusätzlicher Prüfer)

☒ yes

EAC Scopes:
(EAC Branchen)

CDM 01 - Energy industries (renewable - / non-renewable sources)
CDM 04 - Manufacturing industries

Add. qualification:
(zus. Qualifikation)

First Appointment:
(Erstberufung)

01/06/2009

Valid to:
(Gültig bis)

29/05/2015

Remarks:

CDM 01: valid for TA 1.1, 1.2
CDM 04: valid for TA 4.5 - Other WHR and Fuel Switch

Languages:

Chinese
English

Experience Exchange

Date	Location	Remarks	Accreditation(s)
2010-12-21	Beijing	GC CDM Auditor Experience Exchange, Beijing, 2010-12-21to23 United Nations Framework Convention on Climate Change	

Monitoring

Latest Monitoring:
(letzte Beurteilung)

Next Monitoring:
(nächste Beurteilung)

Remarks:

History of scope allocation

Date: 2009-06-02
Change: EAC CDM added
By: Manfred Brinkmann
Reason:

History

Created:	20/03/2008 03:44:05 p.m. ZE8	Daxun Li/Bj/Chn/TUV
Modified:	14/11/2012 06:21:35 p.m. ZE8	Praveen Urs/Chn/TUV
	03/05/2012 09:38:44 p.m. ZE8	Manfred Brinkmann/Jpn/TUV
	17/01/2011 02:43:10 p.m. ZE9	Manfred Brinkmann/Jpn/TUV
	17/01/2011 02:42:56 p.m. ZE9	
	20/03/2008 03:44:19 p.m. ZE8	

Export to ICMS

Last Export:

Qualification

Bracamontes Hinojosa, Héctor /

Emission Trading

United Nations Framework Convention on Climate Change

Auditor No.:
(AuditorenRegNr)

Appointed:
(Zugelassen)

☒ ja

Qualification Level:
(Qualifikationsstufe)

Trainee

External:
(Externer)

☐ ja

Add. reviewer:
(Zusätzlicher Prüfer)

☐ yes

EAC Scopes:
(EAC Branchen)

CDM 01 - Energy industries (renewable - / non-renewable sources)
CDM 13 - Waste handling and disposal

Add. qualification:
(zus. Qualifikation)

First Appointment:
(Erstberufung)

02/01/2011

Valid to:
(Gültig bis)

13/11/2014

Remarks:

TA 1.2, 13.1

Languages:

Spanish
English
French
German

Experience Exchange

Date

Location

Remarks

Accreditation(s)

Monitoring

Latest Monitoring:
(letzte Beurteilung)

Next Monitoring:
(nächste Beurteilung)

Remarks:

[View / Edit Monitoring](#)

History of scope allocation

Date: 2012-10-08
Change: EAC CDM, CDM added
By: Praveen Urs
Reason:

History

Created:	17/11/2011 12:02:26 p.m.	Luis Javier Cerecedo/Mex/TUV
Modified:	09/10/2012 02:51:08 p.m.	Hector Bracamontes/Mex/TUV
	08/10/2012 06:12:34 p.m. ZE8	Praveen Urs/Chn/TUV
	08/10/2012 06:11:39 p.m. ZE8	Praveen Urs/Chn/TUV
	15/03/2012 04:28:54 p.m.	
	15/03/2012 04:28:47 p.m.	
	14/03/2012 04:02:48 p.m. ZE8	
	17/11/2011 12:02:38 p.m.	

Export to ICMS

Last Export:

Qualification

Ma, Jiandong /

Emission Trading

United Nations Framework Convention on Climate Change

Auditor No.:
(AuditorenRegNr)

Appointed:
(Zugelassen)

☒ ja

Qualification Level:
(Qualifikationsstufe)

Lead Auditor

External:
(Externer)

☐ ja

Add. reviewer:
(Zusätzlicher Prüfer)

☐ yes

EAC Scopes:
(EAC Branchen)

CDM 01 - Energy industries (renewable - / non-renewable sources)
CDM 04 - Manufacturing industries

Add. qualification:
(zus. Qualifikation)

First Appointment:
(Erstberufung)

06/07/2009

Valid to:
(Gültig bis)

04/05/2015

Remarks:

CDM 01: valid for TA 1.1, 1.2
CDM 04: valid for TA 4.5 - Other WHR and Fuel Switch

Languages:

Experience Exchange

Date

Location

Remarks

Accreditation(s)

2010-12-21 Beijing

United Nations Framework Convention on Climate Change

GC CDM Auditor Experience Exchange, Beijing, 2010-12-21to23

Monitoring

Latest Monitoring:
(letzte Beurteilung)

Next Monitoring:
(nächste Beurteilung)

Remarks:

History of scope allocation

Date: 2009-07-07
 Change: EAC CDM added
 By: Manfred Brinkmann
 Reason: Role as team leader for DNV confirmed for:
 - China tumuxi small hydropower project
 - Fujian jinjiang LNG power generation project
 Other validation reports are either not (yet) available or show different role (GHG auditor: Henan sanmenxia, Lufeng;
 Trainee: Heilongjiang Hengdaishan).
 Explanation for inconsistent information requested 2009-07-07.
 M. Brinkmann

History

Created:	15/06/2009 02:39:04 p.m. ZE8	Jiandong Ma/Shg/Chn/TUV
Modified:	10/06/2012 01:23:22 p.m. ZE8	Jiandong Ma/Shg/Chn/TUV
	11/05/2012 02:37:01 p.m. ZE8	Jiandong Ma/Shg/Chn/TUV
	28/02/2011 09:43:09 p.m. ZE8	Jiandong Ma/Shg/Chn/TUV
	28/02/2011 09:42:13 p.m. ZE8	
	13/01/2011 03:31:21 p.m. ZE9	
	13/01/2011 03:31:13 p.m. ZE9	
	13/01/2011 03:31:00 p.m. ZE9	
	13/01/2011 03:29:02 p.m. ZE9	
	10/01/2011 08:21:19 p.m. ZE8	
	23/10/2009 10:23:33 p.m. ZE9	

Export to ICMS

Last Export:

Qualification

Deng, Cuiping /

Emission Trading

United Nations Framework Convention on Climate Change

Auditor No.:
(AuditorenRegNr)

Appointed:
(Zugelassen)

☒ ja

Qualification Level:
(Qualifikationsstufe)

Lead Auditor

External:
(Externer)

☐ ja

Add. reviewer:
(Zusätzlicher Prüfer)

☒ yes

EAC Scopes:
(EAC Branchen)

CDM 01 - Energy industries (renewable - / non-renewable sources)
CDM 05 - Chemical industry
CDM 11 - Fugitive emissions from production and consumption of
halocarbons and sulphur hexafluoride
CDM 12 - Solvents use

Add. qualification:
(zus. Qualifikation)

First Appointment:
(Erstberufung)

09/09/2013

Valid to:
(Gültig bis)

07/08/2016

Remarks:

Appointed as Technical Reviewer for TA 1.2 TA 5.1, 11.1, 12.1

Languages:

Experience Exchange

Date

Location

Remarks

Accreditation(s)

2010-12-21 Beijing

United Nations Framework Convention on Climate Change

GC CDM Auditor Experience Exchange, Beijing, 2010-12-21to23

Monitoring

Latest Monitoring:
(letzte Beurteilung)

Next Monitoring:
(nächste Beurteilung)

Remarks:

History of scope allocation

Date: 2012-07-06
 Change: EAC CDM, CDM, CDM added
 By: Praveen Urs
 Reason:

Date:
 Change:
 By:
 Reason:

Date:
 Change:
 By:
 Reason:

Date: 2010-11-11
 Change: EAC CDM, CDM, CDM, CDM added
 By: Manfred Brinkmann
 Reason: Appointed as Technical Reviewer for

History

Created: 13/08/2010 11:19:43 a.m. ZE8 Cuiping Deng/Bj/Chn/TUV
 Modified: 14/05/2014 05:00:21 p.m. ZE8 Henri Phan/Chn/TUV
 14/05/2014 04:59:45 p.m. ZE8 Henri Phan/Chn/TUV
 30/10/2013 05:20:21 p.m. ZE8 Henri Phan/Chn/TUV
 30/10/2013 05:19:33 p.m. ZE8
 10/08/2012 03:03:17 p.m. ZE8
 06/07/2012 04:46:22 p.m. ZE8
 06/07/2012 04:46:10 p.m. ZE8
 02/07/2012 03:09:41 p.m. ZE8
 02/07/2012 03:09:40 p.m. ZE8
 12/02/2012 05:35:34 p.m. ZE8
 12/02/2012 05:35:21 p.m. ZE8
 11/11/2010 12:00:44 p.m. ZE9
 11/11/2010 11:59:20 a.m. ZE9
 11/11/2010 11:58:18 a.m. ZE9
 13/08/2010 11:21:37 a.m. ZE8

Export to ICMS

Last Export:

Qualification

Tang, Walter /

Emission Trading

United Nations Framework Convention on Climate Change

Auditor No.:
(AuditorenRegNr)

Appointed:
(Zugelassen)

☒ ja

Qualification Level:
(Qualifikationsstufe)

Lead Auditor

External:
(Externer)

☐ ja

Add. reviewer:
(Zusätzlicher Prüfer)

☒ yes

EAC Scopes:
(EAC Branchen)

CDM 01 - Energy industries (renewable - / non-renewable sources)
CDM 02 - Energy distribution
CDM 03 - Energy demand
CDM 13 - Waste handling and disposal
CDM 04 - Manufacturing industries

Add. qualification:
(zus. Qualifikation)

First Appointment:
(Erstberufung)

10/11/2011

Valid to:
(Gültig bis)

09/11/2015

Remarks:

Appointed as Technical Reviewer for TA 1.1, 1.2, 2.1, 2.2, 3.1 Direct work experience. TA 4.3, 4.5 based on EB 75, Annex 3 (Transitional provisions)

Languages:

Chinese simplified
English

Experience Exchange

Date

Location

Remarks

Accreditation(s)

Monitoring

Latest Monitoring:
(letzte Beurteilung)

Next Monitoring:
(nächste Beurteilung)

Remarks:

[View / Edit Monitoring](#)

History of scope allocation

Date: 2012-02-13
 Change: EAC CDM added
 By: Praveen Urs
 Reason:

Date: 2012-02-13
 Change: EAC CDM, CDM, CDM, CDM added
 By: Praveen Urs
 Reason:

Created:	12/06/2011 05:00:51 PM	Walter Tang/Chn/TUV
Modified:	08/01/2014 11:43:45 AM	Henri Phan/Chn/TUV
	07/03/2014 04:09:13 PM	Henri Phan/Chn/TUV
	11/01/2013 02:50:03 PM	Henri Phan/Chn/TUV
	07/06/2012 04:47:48 PM	
	07/02/2012 03:08:57 PM	
	07/02/2012 03:08:48 PM	
	05/15/2012 03:30:46 PM	
	02/13/2012 08:00:10 PM	
	12/06/2011 05:01:30 PM	

Export to ICMS

Last Export: