

SMALL-SCALE PoA CDM VALIDATION REPORT

Gestora de Programa Marco Palma, S.L.

VALIDATION OF THE PROGRAM OF ACTIVITIES:

Promotion of POME and EFB Co-Composting

AENOR REFERENCE: 2011/099/CDM/73

VERSION:02

VALIDATION REPORT
"Promotion of POME and EFB Co-Composting"

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|---|--|-----------------|----------------------------|-----------------|--|--|
| Validation Report: | AENOR Reference n°: | | Version of this report: | | Date: | |
| | 2011/099/CDM/73 | | 02 | | 27/12/2012 | |
| SSC- PoA-DD: | Title: | | GSC publication date: | | Comments received: | |
| | Promotion of POME and EFB Co-Composting | | 20/12/2011 | | <input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No | |
| Parties involved: | Host Parties: | | Other involved Parties: | | | |
| | Ecuador | | | | | |
| Project Participant(s): | In host Parties: | | In other involved Parties: | | | |
| | Gestora de Programa Marco Palma, S.L. | | | | | |
| Size of the PoA: | <input checked="" type="checkbox"/> Small scale <input type="checkbox"/> Large scale | | | | | |
| Applied methodology/ies: | Title: | | Code: | | N° version | |
| | Avoidance of methane emissions through composting | | AMS-III.F | | 10 | |
| Applied tools: | Title: | | Version: | | | |
| | Tool to calculate project, baseline and/or leakage from electricity consumption | | version 01 | | | |
| | Title: | | Version: | | | |
| | Tool to calculate project or leakage CO ₂ emissions from fossil fuel combustion | | version 02 | | | |
| Emission reductions (ER): <input checked="" type="checkbox"/> Annual average of the ER (tCO₂e) <input type="checkbox"/> Total ER (tCO₂e) | | GSC PoA-DD: | | Final PoA-DD: | | |
| | | 14,204 (CPA-DD) | | 14,236 (CPA-DD) | | |
| Previous versions of this document: | | | Version: | | Date: | |
| | | | 01 | | 18/07/2012 | |
| | | | | | | |
| Report prepared by: | Climate Change Unit. AENOR: | | | | | |

* The comments are detailed in Section 5 of this Validation Report

VALIDATION REPORT
"Promotion of POME and EFB Co-Composting"**Abbreviations**

| | |
|------------------|--|
| AENOR | Spanish Association for Standardization and Certification |
| AMS-III.F | Avoidance of methane emissions through composting. Version 10.0 |
| CAR | Corrective action request |
| CL | Clarification |
| CDM | Clean Development Mechanism |
| CDM SSC-CPA-DD | CDM Programme Activity Design Document |
| CDM SSC-PoA-DD | Small Scale CDM Programme Of Activities Design Document |
| CER | Certified emission reductions |
| CME | Coordinating and Managing Entity |
| DECISION 4/CMP.1 | Simplified Modalities and Procedures for Small-Scale CDM Project Activities Annex II |
| DNA | Designated national authority |
| EB | Executive Board of the CDM of the Kyoto Protocol |
| EFB | Empty Fruit Bunches |
| EIA | Environmental Impact Assessment |
| FFB | Fresh Fruit Bunches |
| GHG | Greenhouse Gasses |
| FAR | Forward Action Request |
| GSC | Global stakeholder consultation process |
| IPCC | Intergovernmental Panel on Climate Change |
| MAE | Ecuadorian Ministry of Environment |
| MP | Monitoring plan |

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| | |
|--------|---|
| MWh | Megawatt hour |
| NGO | Non-Governmental Organization |
| POME | Palm Oil Mill Effluent |
| PP | Project Participant |
| tC | Carbon tonne |
| TJ | Terajoule |
| UNFCCC | United Nations Framework Convention on Climate Change |
| VVM | Validation and Verification Manual |
| WWTP | Wastewater treatment plant |

Table 1: Abbreviations

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1 INTRODUCTION

1.1 Objective

This validation concerns a small scale CDM Programme of Activities (hereinafter PoA) implemented by "Gestora de Programa Marco Palma, S.L" in Ecuador, to reduce emissions of CO₂ by means of installing co-composting plants at existing palm oil mills; and installing co-composting plants instead of anaerobic POME treatment systems at new palm oil mills.

"Gestora de Programa Marco Palma, S.L." has commissioned AENOR to validate this PoA. The objective of the validation process is to have an independent, third party assessment of the proposed Programme of Activities (PoA) and the CDM Programme Activity (CPA) template with generic information applicable to all CPAs under that PoA and the associated San Patricio POME and EFB Co-Composting Project CPA-DD against the applicable CDM requirements. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country issues and criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is a requirement for all CDM projects and is considered essential in providing quality assurance for the project.

UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities as agreed to in the Bonn Agreement and the Marrakech Accords.

1.2 Scope

The scope of the validation is to assess all aspects of GHG reduction involved in the project, including the project design, the baseline, the methane emissions, the determination of the emission factor of the grid to calculate the project emissions, and the procedures proposed for monitoring the emission reductions in the future.

The following documents were reviewed as part of the scope of the activity:

- CDM SSC-PoA-DD /1-2/, including baseline study and monitoring plan
- CPA San Patricio POME and EFB Co-Composting Project /3/
- CDM SSC-generic-CPA-DD /4/
- Approved Methodology: AMS III.F version 10.0.0 /5/
- Approved Methodology: AMS III.H version 16 /6/
- Tool to calculate project, baseline and/or leakage from electricity consumption. Version 01 /7/
- Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion. Version 02 /8/
- Decision 3/CMP.1 and relevant decisions and guidelines from the EB.
- Guidelines on the demonstration of Additionality of Small-Scale Project Activities, version 09 /9/

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- Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities. Version 02.1 /10/
- Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities v 03.0 /11/
- Procedures for Registration of a Programme of Activities as a single CDM project activity and issuance of certified emission reductions for a Programme of Activities. Version 04.1 /32/.
- Guidelines on the Assessment of Investment Analysis, version 05 /12/
- CDM Validation and Verification Manual version 01.2 /13/
- Letter of Approval from the DNA of Ecuador/14/
- Associated documentation (environmental requirements, investment analysis, etc)

The validation scope is defined as an independent and objective review of the PoA-DD, San Patricio POME and EFB Co-Composting Project CPA-DD and generic CPA-DD, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. AENOR, based on the Specific Instruction for the Processing and Conducting of Validation, Registration, Verification and Certification of Kyoto Protocol CDM Project Activities (IE-DTC-039) /16/, has used a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

The validation is not meant to provide any consultancy services to the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the PoA-DD.

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2 METHODOLOGY

The project assessment aims at being a risk-based approach and is based on the methodology developed in the Validation and Verification Manual, an initiative of designated and applicant entities, which aims to harmonize the approach and quality of all such assessments.

The validation of the programme began in December 2011 and was concluded in December 2012. The validation was performed in the manner of an audit, where, first, a desk review of the PoA-DD, San Patricio POME and EFB Co-Composting Project CPA-DD and generic CPA-DD was undertaken against the approved methodology and CDM and other relevant criteria. The desk review was followed by a site visit to San Patricio POME and EFB Co-Composting project site and key stakeholders in Ecuador.

In order to ensure transparency, two validation protocols were customized for the PoA and the CPAs, according to Specific Instruction IE/DTC/039. The protocols show, in a transparent manner, criteria (requirements), means of verification and the results from validating the identified criteria.

The sequence of the validation is given in the table below:

| Topic | Date |
|--|---------------|
| Submission of PoA-DD for global stakeholder consultation process | 20/12/2011 |
| On-site visit | 24-26/01/2012 |
| Validation Protocol - Version 01. | 08/02/2012 |
| Final Validation Report | 27/12/2012 |

Table 2: Sequence of the main validation activities

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2.1 Appointment of team members and technical reviewers

The list of involved personnel and the qualification status are summarized in Annex 2 and in the table below:

| Name | Qualification | |
|------------------------------|----------------------|------------------------|
| | Position in the team | Technical areas |
| Alfonso Medrano Gutiérrez | Chief Validator | TA 1.2 |
| José Luis Fuentes Pérez | Validator | TA 1.2, TA 13.1 |
| Elena Llorente Pérez | Technical Reviewer | TA 1.2 |
| Marcelino Pellitero Martínez | Technical Reviewer | TA 1.2, TA 13.1 |

Table 3: List of the personnel involved

Technical areas (TA) mentioned above correspond to the following:

| TA code | Technical area |
|---------|---|
| TA 1.1 | Thermal energy generation from fossil fuels and biomass including thermal electricity from solar (COMPLEX); |
| TA 1.2 | Energy generation from renewable energy sources. |
| TA 2.1 | Electricity distribution; |
| TA 2.2 | Heat distribution |
| TA 3.1 | Energy demand |
| TA 4. 1 | Cement sector (COMPLEX); |
| TA 4.2 | Aluminium (COMPLEX); |
| TA 4.3 | Iron and steel (COMPLEX); |
| TA 4.4 | Refinery (COMPLEX) |
| TA 5.1 | Chemical process industries (COMPLEX). |
| TA 6.1 | Construction. |
| TA 7.1 | Transport. |

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| TA code | Technical area |
|---------|--|
| TA 8.1 | Mining and mineral processes, excluding those included in TA 8.2 below; |
| TA 8.2 | Oil and gas industry, coal mine methane recovery and use (COMPLEX). |
| TA 9.1 | Metal production. |
| TA 10.1 | Mining and mineral processes, excluding those included in TA 10.2 below; |
| TA 10.2 | Oil and gas industry, coal mine methane recovery and use (COMPLEX). |
| TA 11.1 | Chemical process industries (COMPLEX); |
| TA 11.2 | GHG capture and destruction. |
| TA 12.1 | Chemical process industries (COMPLEX). |
| TA 13.1 | Waste handling and disposal; |
| TA 13.2 | Animal waste management. |
| TA 14.1 | Forestry |
| TA 15.1 | Agriculture |
| TA 15.2 | Animal waste management. |

Table 4: List of technical areas

2.2 Document review

The POA-DD, San Patricio POME and EFB Co-Composting Project CPA-DD and generic CPA-DD submitted by the PPs were reviewed against the approved methodology and against CDM and other relevant criteria. Additional background documents related to the project design, baseline and financial analysis were also made available before and during the on-site visit in Ecuador.

To address the corrective actions and clarification requests that arose from the desk review and on-site visit, the consultants revised the initial project design documents submitted and developed the final PoA-DD and CPA-DD.

The reviewed documents used during the validation process are listed in section 8 of this report.

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2.3 Follow-up actions

The AENOR validation team composed by Alfonso Medrano Gutiérrez and José Luis Fuentes Pérez conducted interviews with project developers and main stakeholders in Ecuador to confirm selected information and to resolve issues identified in the document review.

On 24-26/01/2012, AENOR's validation team performed interviews and physical site inspections with project stakeholders to confirm relevant information, and to resolve issues identified in the document review. During the visit, representatives from the CME and the project developer of San Patricio, in addition to relevant local stakeholders such as local authorities and local inhabitants, affected by the PoA were interviewed. Also, the AENOR team visited the Ecuadorian DNA representative.

| Interviewed organization Person/Position | Interview topics |
|---|--|
| Gestora de Programa Marco Palma, S.L a) Mr Larry Philp. General Administrator. | ✓ On site visit to San Patricio Palm Oil Mill ✓ PoA Presentation. ✓ Additionality assessment. ✓ Baseline determination. |
| Alespalma S.A. a) Mr. José Antonio Uribe. Development Director b) Mr. Jorge A. Troya. Development Manager. c) Mr. Ivan Moreno. San Patricio Superintendent. | ✓ On site visit to San Patricio Palm Oil Mill ✓ Project design ✓ Baseline determination. ✓ Environmental Assessment. |
| Climate Change Subsecretary. Environmental Mnistry. (DNA of Ecuador). a) Ms. Alexandra Buri. DNA Coordinator | ✓ PoA's sustainable development contribution. ✓ DNA's opinion. ✓ Environmental Assessment. ✓ Letter of Approval. |

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| Interviewed organization Person/Position | Interview topics |
|--|---|
| Stakeholders interviewed San Patricio a) Mr. Aníbal Mazapanta. Resident in "Barrio Virgen del Cisne" close to Alespama Mill. Contractor for transport services. b) Mrs. Edda Eudocia Ruiz Contreras. Manager at "Banco Nacional de Fomento" c) Ms. Mónica Cabrera: Microfinance Advisor at "Banco Nacional de Fomento". | ✓ Stakeholder consultation ✓ Opinion about the PoA |

Table 5. Interview topics

2.4 Findings

As an outcome of the validation process, the team can raise different types of findings according to the CDM Validation and Verification Manual.

A Clarification Request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met; or

Where a non-conformance arises the validation team shall raise a Corrective Action Request (CAR). A CAR is issued, where:

- 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.

Failure to address a CL may result in a CAR. Information or clarifications provided as a result of a CL may also lead to a CAR.

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.

The CME and the project participants were requested to address all validation findings and ultimately provided the validation team with sufficient evidence to determine that the applicable CDM requirements have been met. The CME modified the initial PoA-DD to resolve the validation team concerns and resubmitted a final version of the PoA-DD. AENOR has prepared this report based on the final PoA-DD.

All the validation findings are summarized in section 3 below and documented in more detail in section 7 and in the validation protocol included in Annex 1.

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2.5 Internal Quality Control

Following the completion of the assessment process by the validation team, all documentation undergoes an internal quality control through a technical review before submission to the CDM-EB. The technical reviewer is a qualified member of AENOR, independent from the team that carried out the validation of the project activity. The technical reviewer or the team appointed for the technical review are qualified in the technical area(s) and sectoral scope(s) of the PoA.

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3 VALIDATION FINDINGS**3.1 Approval**

Regarding the approval requirements, the letters of approval were requested to the CME through CAR 1.

The Letter of Approval from the Ecuadorian DNA was provided to the validation team directly by the CME. The LoA was issued on 20 August 2012 (MAE-D-2012-0658) by the DNA of Ecuador. AENOR confirms that the LoA states the following:

- The Government of Ecuador ratified the Kyoto Protocol through the Executive Decree N° 1588 published in the Official Registry N°342 on December 20th 1999.
- The CDM Programme of Activities titled: "Promotion of POME and EFB Co-Composting" contributes to the sustainable development of Ecuador.
- The participation of the participants of the CDM Programme of Activities is voluntary.
- The "Gestora de Programa de Palma, S.L." is authorized as the Coordinating/Managing Entity for the CDM Programme of Activities.
- The San Patricio POME and EFB Co-composting Project is authorized as the first Component Project Activity (CPA).

During the validation process the CME voluntarily decided to change the PoA's boundary. The PoA-DD and CPA-DD submitted for global stakeholder consultation included Ecuador and Colombia as the host countries for this PoA, but in the final version of the PoA-DD and CPA-DD, Colombia has not been included as a host country. Due to this change, the title of the PoA has been changed from "*Promotion of POME and EFB Co-Composting in Colombia and Ecuador*" included in the first version of the PoA-DD to "*Promotion of POME and EFB Co-Composting*" included in the latest version of the PoA-DD. Therefore the Letter of Approval from Colombia is not necessary anymore.

AENOR confirms that the LoA from Ecuador has been issued by the respective Designated National Authority and there is no doubt of the authenticity of the letters of approval received from the CME; hence AENOR confirms that the LoA is in compliance with paragraphs 45-48 of the VVM v.1.2. In addition, AENOR has confirmed through a telephone conversation with Alexandra Buri, (Ecuadorian DNA Coordinator) the award of the LoA for the proposed PoA.

The validation did not reveal any information that indicates the programme can be seen as a diversion of ODA funding towards Ecuador.

3.2 Participation

Ecuador, as the host Party is involved in the project.

The Government of Ecuador ratified the Kyoto Protocol through the Executive Decree N° 1588 published in the Official Registry N° 342 on December 20th, 1999 and has appointed a DNA.

The Coordinating and Managing Entity of the PoA is "Gestora de Programa Marco de Palma S.L", which has been authorized by the host Party DNA.

All project participants have been listed in section A.3 of the final PoA-DD. Information regarding them is confirmed as consistent in the latest version of the PoA-DD and San Patricio POME and EFB Co-Composting Project CPA-DD and generic CPA-DD.

AENOR confirms that no entities other than those approved as project participants are included in the final PoA-DD.

3.3 Programme Design Documents

Due to the clarifications and corrective actions requested during the validation process, the project participants made a final version of the PoA-DD dated on 15/12/2012 and the Generic CPA-DD, which include corrections or clarifications to all issues raised.

The PoA-DD and the Generic CPA-DD are in compliance with relevant form and guidance as provided by UNFCCC. The most recent version of the forms under VVM Track is used.

AENOR considers that the applicable guidelines for the completion of the PoA documents have been followed. Relevant information was provided by the Managing entity and/ or project participants in the applicable PoA sections. Completeness was assessed through the protocol included in Annex 1.

3.4 Programme description

The following description of the programme of activities as per PoA-DD, generic CPA-DD and San Patricio POME and EFB Co-Composting Project CPA-DD could be verified during the on-site visit:

The CDM Programme of Activities, "Promotion of POME and EFB Co-composting" involves co-composting of palm oil mill effluent (POME) and empty fruit bunches (EFB) at palm oil mills in Ecuador. The compost produced will be applied on the plantations that supply the mills. This PoA will include:

- a) Installing co-composting plants at existing palm oil mills;
- b) Installing co-composting plants instead of anaerobic POME treatment systems at new palm oil mills.

The goal of the PoA is to reduce the pollution potential of EFB and POME by implementing an aerobic composting process of these two palm oil mill waste streams. It consists of co-composting EFB that would have been left to decay along with POME. Each CPA under this PoA will result in the avoidance of large

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quantity of methane that would have been released in an uncontrolled manner into the atmosphere from the anaerobic decay of EFB and POME.

EFB will be composted utilizing the Windrow technology in covered composting plants. POME is added to the composting process to maintain adequate moisture level throughout the process cycle and provide additional nitrogen content for a compost rich in nutrients. Aerobic composting conditions will be assured through frequent turning of the compost piles with the Windrow turners and will be monitored through the compost quality control plan. The entire quantity of compost produced will be applied in the plantations that supply the mills.

The PoA CME has confirmed that there is no diversion of ODA involved. The starting date of the proposed PoA is properly defined as 20/12/2011 and it is justified in section 3.6.1 of this report. The length of PoA is taken as 28 years.

This PoA selects just one measure and one specified technology. AENOR confirms that there are no multiple measures / technologies under this PoA.

During the validation process the CME has voluntarily decided to change the PoA's boundary. The PoA-DD and CPA-DD submitted for global stakeholder consultation included Colombia as a host country for this PoA, but in the final version of the PoA-DD and CPA-DD, Colombia has not been included as a host country for this PoA. Due to this change, the title of the PoA has been also changed from "*Promotion of POME and EFB Co-Composting in Colombia and Ecuador*" included in the first version of the PoA-DD to "*Promotion of POME and EFB Co-Composting*" included in the latest version of the PoA-DD.

The information presented in the PoA documents on the technical design is consistent with the actual planning and implementation of the project activity confirmed in the following ways:

- A review of data and information (see section 8)
- An on-site visit to the place where the associated real case CPA is being implemented and interview with relevant stakeholder and personnel with knowledge of the project in attendance
- A review of information related to similar projects or technologies which have been used to validate the accuracy and completeness of the project description.

In conclusion, AENOR confirms that the PoA project description, as included in the PoA-DD, is sufficiently accurate and complete in order to comply with the requirements of the CDM and therefore in compliance with VVM paragraphs 58-64.

3.5 Baseline methodology

The PoA-DD describes the baseline methodology, which is in conformance with the approved baseline methodology AMS-III.F version 10.0 entitled "*Avoidance of methane emissions through composting*". According to this methodology, for the baseline wastewater emission, the "*Small-Scale Methodology III.H: Methane recovery in*

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wastewater treatment", version 16.0 has been used. The use of the methodology AMS III.H version 16 is referenced by AMS III.F, AENOR confirms that this PoA does not involve multiple methodologies.

The PoA-DD applies also to the following valid tools:

- a) "Tool to calculate project, baseline and/or leakage from electricity consumption", version 01.
- b) "Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion", version 02.

Therefore, this PoA applies to a valid version of a CDM Methodology approved by the EB. By means of cross check it can be confirmed that the applied methodology is directly derived from the methodologies section on the CDM <http://cdm.unfccc.int/index.html>.

The PoA meets all applicability conditions of the applied methodology and all methodology components referred to in the applied methodology. Beyond this, the proposed PoA meets all the other possible requirements or stipulations mentioned in all sections of the selected methodology.

Furthermore the programme of activities is not expected to result in significant emissions, related to both project and leakage, other than those listed in the methodology. In summary it has been assessed that the PoA applies a valid version of an approved CDM methodology and that the methodology is applicable to the programme.

3.5.1 Applicability of the selected methodology to the Programme of Activities

The selected baseline and monitoring methodology used for the Programme of Activities "Promotion of POME and EFB Co-Composting" is AMS-III.F version 10.0, which is valid from 04/03/2011 to 24/05/2012 and was previously approved by the CDM Executive Board. Request for Registration of projects applying version 10.0 of this methodology can be submitted until 25/01/2013.

The methodology is applicable to the Programme of Activities, because:

1. *This methodology comprises measures to avoid the emissions of methane to the atmosphere from biomass or other organic matter that would have otherwise been left to decay anaerobically in a solid waste disposal site (SWDS), or in an animal waste management system (AWMS), or in a wastewater treatment system (WWTS). In the project activity, controlled aerobic treatment by composting of biomass is introduced.*

Aerobic (Windrow) composting is specified for all the CPAs under the proposed Programme of Activities

2. *The project activity does not recover or combust landfill gas from the disposal site (unlike AMS-III.G "Landfill methane recovery"), and does not undertake controlled combustion of the waste that is not treated biologically in a first step (unlike AMS-III.E "Avoidance of methane production from decay of biomass through controlled combustion, gasification or mechanical/thermal treatment"). Project activities that recover biogas from wastewater treatment shall*

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use methodology AMS-III.H "Methane recovery in wastewater treatment". Project activities involving co-digestion of organic matters shall apply methodology AMS-III.AO "Methane recovery through controlled anaerobic digestion".

Only composting is specified for CPAs. No eligibility criteria include recovery or combustion of landfill gas, controlled combustion of waste, recovery of biogas or co-digestion of organic.

3. *Measures are limited to those that result in emission reductions of less than or equal to 60 kt CO₂ equivalent annually.*

As it is specified in the eligibility criterion nº6, the ex-ante emission reduction for all CPAs within the PoA will be less than 60 kt CO₂e/year.

4. *This methodology is applicable to the composting of the organic fraction of municipal solid waste and biomass waste from agricultural or agro-industrial activities including manure.*

EFB and POME are biomass wastes from palm oil mills, an agro-industrial activity.

5. *This methodology includes construction and expansion of treatment facilities as well as activities that increase capacity utilization at an existing facility. For project activities that increase capacity utilization at existing facilities, project participant(s) shall demonstrate that special efforts are made to increase the capacity utilization, that the existing facility meets all applicable laws and regulations and that the existing facility is not included in a separate CDM project activity. The special efforts should be identified and described.*

As per eligibility criteria nº 2, only newly built composting plants are eligible as CPAs. Expansion of existing facilities or any increase in capacity utilization is not eligible under this PoA.

6. *This methodology is also applicable for co-composting wastewater and solid biomass waste, where wastewater would otherwise have been treated in an anaerobic wastewater treatment system without biogas recovery. The wastewater in the project scenario is used as a source of moisture and/or nutrients to the biological treatment process e.g. composting of empty fruit bunches (EFB), a residue from palm oil production, with the addition of palm oil mill effluent (POME) which is the wastewater co-produced from palm oil production.*

Co-composting of EFB with POME, the example cited by the methodology, is precisely specified as eligibility criteria nº1.

7. *In case of co-composting, if it cannot be demonstrated that the organic matter would otherwise have been left to decay anaerobically, baseline emissions related to such organic matter shall be accounted for as zero, whereas project emissions shall be calculated according to the procedures presented in this methodology for all co-composted substrates.*

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Since individual baselines for EFB management could vary amongst CPAs under this PoA and to be conservative, baseline emissions for EFB are considered zero (Eligibility criteria nº 5).

8. *The location and characteristics of the disposal site of the biomass, animal manure and co-composting wastewater in the baseline condition shall be known, in such a way as to allow the estimation of its methane emissions, using the provisions of AMS-III.G, AMS-III.E (concerning stockpile), AMS-III.D "Methane recovery in animal manure management systems" or AMS-III.H respectively.*

Project activities for composting of animal manure shall also meet the requirements under paragraphs 1, and 2 (c) of AMS-III.D. Further no bedding material is used in the animal barns or intentionally added to the manure stream in the baseline. Blending materials may be added in the project scenario to increase the efficiency of the composting process (e.g. to achieve a desirable C/N ratio or free air space value), however, only monitored quantity of solid waste or manure or wastewater diverted from the baseline treatment system is used for emission reduction calculation.

The following requirement shall be checked ex ante at the beginning of each crediting period:

- a) Establish that identified landfill(s)/stockpile(s) can be expected to accommodate the waste to be used for the project activity for the duration of the crediting period; or*
- b) Establish that it is common practice in the region to dispose off the waste in solid waste disposal site (landfill)/stockpile(s).*

Baseline wastewater treatment systems are fully specified by the eligibility criteria nº 5, 7, and 8. Baseline disposal of solid wastes are ignored, to be conservative. CPAs have the flexibility to add other organic matter to the composting mix. Since emission reductions are only accrued for POME, the baseline emissions for all other organic matter is considered zero to be conservative.

This PoA selects option a). Baseline management of EFB is considered to be mulching on the plantations, even though their emissions are ignored. Typical waste generation is 6t EFB/hectare of plantation (600 grams per square meter) per year. Therefore, the site can easily accommodate the waste over the crediting period.

9. *The project participants shall clearly define the geographical boundary of the region referred in paragraph 8 (b), and document it in the CDM-PDD. In defining the geographical boundary of the region, project participants should take into account the source of the waste i.e. if waste is transported up to 50 km, the region may cover a radius of 50 km around the project activity. In addition, it should also consider the distance to which the final product after composting will be transported. In either case, the region should cover a reasonable radius around the project activity that can be justified with reference to the project circumstances but in no case it shall be more than 200 km. Once defined, the region should not be changed during the crediting period(s).*

Not applicable since under this PoA option a) has been chosen.

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10. *In case produced compost is handled aerobically and submitted to soil application, the proper conditions and procedures (not resulting in methane emissions) must be ensured.*

As it is stated in eligibility criteria nº 15 c) proper soil application of compost will be monitored in each CPA, to ensure that proper conditions and procedures are used.

11. *In case produced compost is treated thermally/mechanically, the provisions in AMS-III.E related to thermal/mechanical treatment shall be applied.*

As it is stated in eligibility criteria nº 14 e), thermal/mechanical treatment of compost is excluded under this PoA.

12. *In case produced compost is stored under anaerobic conditions and/or delivered to a landfill, emissions from the residual organic content shall to be taken into account and calculated as per the latest version of the "Tool to determine methane emissions avoided from disposal of waste at a solid waste disposal site".*

As it is stated in eligibility criteria nº 9, 15 d), compost will be applied in plantations, not landfilled. Compost will not be stored under anaerobic conditions.

AENOR confirms the applicability of the selected methodology to the Programme of Activities. The latest version of the PoA-DD adequately describes the different applicability conditions of the methodology and no deviation from the methodology has been necessary. The applicability of the methodology has been properly included in the eligibility criteria of the PoA.

The Programme of Activities is not expected to result in emissions other than those allowed by the methodology, and there are no greenhouse gas emissions occurring within the proposed CDM project activity boundary as a result of the implementation of the proposed CDM project activity which are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology.

3.5.2 Programme boundary

The boundary (geographically and related to GHG sources / sinks) is correctly explained in section A.4.1.2 of the PoA-DD. The geographical boundary of this PoA is the geographical area of Ecuador.

During the validation process the CME has voluntarily decided to change the PoA's boundary. The PoA-DD and CPAs-DD submitted for global stakeholder consultation included Colombia as a host country for this PoA, but in the final version of the PoA-DD and CPA-DD, Colombia is not included anymore as a host country for this PoA. Due to this change, the title of the PoA has been also changed from "*Promotion of POME and EFB Co-Composting in Colombia and Ecuador*" included in the first version of the PoA-DD to "*Promotion of POME and EFB Co-Composting*" included in the latest version of the PoA-DD.

As per AMS-III.F version 10.0, the boundary of the CPA under this PoA is the physical, geographical site:

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- a) Where the solid waste would have been disposed and the methane emission occurs in absence of the proposed project activity;
- b) In the case of projects co-composting wastewater, where the co-composting wastewater would have been treated anaerobically in the absence of the project activity;
- c) Where the treatment of biomass through composting takes place;
- d) Where the products from composting (compost) is handled, disposed, submitted to soil application, or treated thermally/mechanically;
- e) And the itineraries between them (a, b, c, and d), where the transportation of waste, wastewater, where applicable manure, product of treatment (compost) occurs.

Baseline treatment for co-composting wastewater is defined under this PoA as onsite anaerobic treatment lagoons. To be conservative, baseline emission from EFB decay are ignored, and thus excluded from the project boundary. Composting will take place onsite at all CPAs, on the plantations associated with the mills that host each CPA. Compost will not be sold for other uses. All the itineraries, where the transportation of waste, wastewater, applicable manure, product of treatment (compost) occurs, are included within the project boundary of this PoA.

Therefore, the project boundary is delimited by the CPA's new composting plant, the host palm oil mill wastewater treatment lagoons, and the plantations that serve the host palm oil mill.

The physical delineation of the CPA under the PoA and the description of the emission sources and GHGs that are included in the CPA boundary are appropriate for the purpose of calculating project and baseline emissions for each CPA.

In addition, all emission sources and GHGs related included and excluded from the project boundary are clearly identified and described in a complete manner in the latest version of the PoA-DD.

The validation team states that the identified boundary and the selected sources and gases are correctly justified by the project proponent in the PoA-DD, and they are in accordance with the methodology AMS-III.F version 10.0.

3.5.3 Baseline identification

According to the applied methodology, the baseline scenario *"is the situation where the situation where, in the absence of the project activity, biomass and other organic matter are left to decay within the project boundary and methane is emitted to the atmosphere."*

The CME has divided the identification of the Baseline in two scenarios: POME Baseline and EFB Baseline.

POME Baseline

For composting plants to be implemented in existing palm oil mills, the baseline is determined by the existing practice, anaerobic treatment lagoons.

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For composting plants to be implemented in new palm oil mills, the baseline scenario has been correctly identified following the General Guidelines to SSC CDM Methodologies version 17 [17].

Step 1

Identify the various alternatives available to the project proponent that deliver comparable level of service including the proposed project activity or PoA undertaken without being registered as a CDM project activity or PoA.

Technically viable alternatives for treating POME are:

- a) Anaerobic treatment lagoons (common practice in Ecuador, as cited previously)
- b) Anaerobic treatment lagoons with methane recovery and flaring (not as a CDM project)
- c) Anaerobic treatment lagoons with methane recovery and biogas utilization (not as a CDM project)
- d) This PoA technology (Co-composting of POME with EFB, not as a CDM project)
- e) Direct discharge of POME

Step 2

List the alternatives identified per Step 1 in compliance with the local regulations (if any of the identified baseline is not in compliance with the local regulations, then exclude the same from further consideration).

Direct discharge of POME does not comply with Ecuadorian discharge regulations and therefore, this alternative has been correctly removed from the list stated above.

Step 3

Eliminate and rank the alternatives identified in Step 2 taking into account barrier tests specified in attachment A to Appendix B of the simplified modalities and procedures of SSC CDM.

Alternatives b) and c) with methane recovery are add-ons to anaerobic treatment lagoons and they involve higher initial and operating costs than lagoons without methane recovery. Therefore, the two alternatives with methane recovery can be ruled out based on the investment barrier.

The two remaining alternatives are a) *anaerobic treatment lagoons*; and d) *this project activity undertaken not as a CDM project activity*. To demonstrate the additionality of each CPA, an investment analysis is carried out in this PoA between these two alternatives.

The demonstration of additionality by comparing these two alternatives confirms anaerobic treatment lagoons as the baseline scenario for POME for each CPA included in this PoA. (See section 3.6.)

In the case when the investment analysis does not demonstrate additionality (and hence confirm lagoons as the baseline), then the CPA would not be included in this PoA, as per eligibility criteria number 10.

Step 4

If only one alternative remains that is:

Not the proposed project activity undertaken without being registered as a CDM project activity; and

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It corresponds to one of the baseline scenarios provided in the methodology; then the project activity is eligible under the methodology.

If more than one alternatives remain that correspond to the baseline scenarios provided in the methodology, choose the alternative with the least emissions as the baseline.

The remaining alternative, anaerobic wastewater treatment in lagoons, is not the proposed project activity and it does coincide with the one stated in the applied methodology. Therefore, the project activity is eligible under the methodology and this baseline for POME is confirmed.

EFB Baseline

As it has been stated in the eligibility criteria nº 5 and according to paragraph 7 of the applied methodology, baseline emissions for EFB have been considered to be zero. Common practice for managing EFB in Ecuador is hauling EFB to the plantations (return trips of the trucks that deliver FFB to the mills) and stacking the EFB in piles where they decay naturally and are then mulched. Depending on site-specific circumstances, the decay process can be anaerobic or partially so. Since piling and then mulching is common practice and documented in approved EIAs, it is considered the EFB baseline practice. Nevertheless, to be conservative, the baseline emissions for EFB are ignored.

AENOR confirms that credible alternatives to the project activity have been identified according to the applied methodology and the General Guidelines to SSC CDM Methodologies version 17 in order to determine the most realistic baseline scenario. (VVM 1.2 , paragraph 105). Therefore, the baseline determination is considered as transparent and reasonable.

3.5.4 Algorithms and/or formulae used to determine emission reductions

In accordance with the methodology, the emission reductions are calculated as follows:

$$ER_y = BE_y - (PE_y + LE_y)$$

Where:

- ER_y Total emissions reductions during the year y in tons of CO₂
- BE_y Baseline emissions for the project activity during the year y in tons of CO₂
- PE_y Emissions from the project activity during the year y in tons of CO₂
- LE_y Leakage emissions for the project activity during the year y in tons of CO₂

Baseline Emissions

According to paragraph 14 of the applied methodology AMS III.F v10.0, baseline emissions are calculated as follows:

$$BE_y = BE_{CH_4,SWDS,y} + BE_{ww,y} + BE_{CH_4,manure,y} - MD_{y,reg} * GWP_{CH_4}$$

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Where:

| | |
|--------------------|--|
| BE_y | Baseline Emissions in year y (t CO ₂) |
| $BE_{CH_4,SWDS}$ | Yearly methane generation potential of the solid waste composted by the project activity during the years "x" from the beginning of the project activity (x=1) up to the year y (tCO _{2e}) |
| $BE_{ww,y}$ | Where applicable, baseline emissions from the wastewater co-composted, calculated as per the procedures in AMS III.H (tonne) |
| $BE_{CH_4,manure}$ | Where applicable, baseline emissions from manure composted by the project activities, as per the procedures of AMS-III.D |
| $MD_{y,reg}$ | Amount of methane that would have to be captured and combusted in the year y to comply with the prevailing regulations (tonne) |
| GWP_{CH_4} | GWP for CH ₄ |

According to the eligibility criteria nº 5, emissions reductions will be accrued only for methane avoidance from POME, not for EFB or any other biomass that co-composted. No methane capture from the anaerobic treatment lagoons is required under prevailing regulations. Manure and SWDS emissions are not included in this programme of activities which is a conservative approach.

Paragraph 14 of methodology AMS III.F v10.0 requires that the term $BE_{ww,y}$ be calculated as per methodology AMS III.H.

According to paragraph 20 of methodology AMS III.H v16.0 the equivalent term $BE_{ww,treatment,y}$ is calculated as follows:

$$BE_{ww,treatment,y} = \sum_i (Q_{ww,i,j} * COD_{inflow,i,y} * n_{COD,BL,i} * MCF_{ww,treatment,BL,i} * B_{o,ww} * UF_{BL} * GWP_{CH_4})$$

Where:

| | |
|---------------------------|--|
| $BE_{ww,treatment,y}$ | Baseline emissions from the wastewater co-composted |
| $Q_{ww,i,j}$ | Volume of wastewater entering the co-composting facility in the year y (m3) |
| $COD_{inflow,i,y}$ | Chemical oxygen demand of the wastewater entering the co-composting facility in the year y (tonnes/m3) |
| $n_{COD,BL,i}$ | COD removal efficiency of the baseline WWTs |
| $MCF_{ww,treatment,BL,i}$ | Methane correction factor for the wastewater treatment system in the baseline scenario |
| i | Index for baseline wastewater treatment system |
| $B_{o,ww}$ | Methane producing capacity for the wastewater (kg CH ₄ /kg BOD) |
| UF_{BL} | Model correction factor to account for model uncertainties for wastewater |

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GWP_{CH_4} GWP for CH_4

This formula has been adapted to this programme of activities due to:

- a) Only one wastewater stream is used in this PoA, hence the summation sign and index i has been ignored.
- b) AMS III.H v16.0 allows either BOD or COD to be used to determine the organic content of the wastewater. For this Programme of Activities, the CME has selected to use BOD in the BE calculation, because BOD is the preferred option of most international organizations such as the UN and the EU for water quality as evidenced in the 2005 UNEP GEMS Workshop Report on Development and Use of Global Water Quality Indicators and Indices.

The subscripts of the variable BE have been adjusted to be consistent with methodology AMSIII.F v10.0. and the formula is thus revised to reflect the above observations:

$$BE_{ww,treatment,y} = Q_{ww,y} * BOD_{inf low,y} * n_{BOD,y} * MCF_{ww,treatment} * B_{o,ww} * UF_{Bl} * GWP_{CH_4}$$

Where:

$BOD_{inf low,y}$ Biological oxygen demand of the wastewater entering the co-composting facility in the year y (tonnes/m³)

$n_{COD,y}$ BOD removal efficiency of the baseline WWTs

$MCF_{ww,treatment}$ Methane correction factor for the wastewater treatment system in the baseline scenario

AENOR confirms that the calculation of the Baseline Emissions included in the latest version of the PoA-DD is correct according to the applied methodology and all the formulae have been correctly described and used.

Project Emissions

According to the applied methodology, project activity emissions consist of:

- a) CO₂ emissions due to incremental transportation distances.
- b) CO₂ emissions from electricity and fossil fuel consumption by the project activity facilities.
- c) Methane emissions during composting process.
- d) Methane emissions from runoffwater.
- e) In case the compost is stored under anaerobic conditions and/or delivered to a landfill: the methane emissions from disposal/storage of compost.

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$$PE_y = PE_{y,transport} + PE_{y,power} + PE_{y,comp} + PE_{y,runoff} + PE_{y,res\ waste}$$

Where:

| | |
|---------------------|---|
| PE_y | Project activity emissions in the year y (tCO ₂ e) |
| $PE_{y,transport}$ | Emissions from incremental transportation in the year y (tCO ₂ e) |
| $PE_{y,power}$ | Emissions from electricity or fossil fuel consumption in the year y (tCO ₂ e) |
| $PE_{y,comp}$ | Methane emissions during composting process in the year y (tCO ₂ e) |
| $PE_{y,runoff}$ | Methane emissions from runoff water in the year y (tCO ₂ e) |
| $PE_{y,res\ waste}$ | In case produced compost is subject to anaerobic storage or disposed in a landfill: methane emissions from the anaerobic decay of the residual organic content (tCO ₂ e) |

The CPAs under this PoA will not involve incremental transport or storage under anaerobic conditions. And therefore the terms $PE_{y,transp}$ and $PE_{y,res\ waste}$ waste are equal to zero.

The definition of the term **$PE_{y,power}$** embraces both electric power and fossil fuel consumption from project equipment items. In this PoA this parameter is calculated as follows:

Project Emissions from Electricity consumption

Project emissions from electricity consumption have been correctly calculated following the "Tool to calculate baseline, project and/or leakage emissions from electricity consumption" v01, as it is required by paragraph 27.8 of AMS III.F v10.0. For the emission factor, this PoA uses the conservative default value of 1.3 tCO₂/MWh stated in that tool. For the system losses, this PoA uses the conservative default value of 20% as per the tool.

Project Emissions from Fossil Fuel Consumption

Project emissions from fossil fuel consumption have been correctly calculated following the "Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion" v2, as it is required by paragraph 27.8 of AMS III.F v10.0. The only fossil fuel to be consumed in this PoA is diesel fuel for the windrow turner and other mobile project equipment items.

According to the information explained above, the formula used for the calculation of $PE_{y,power}$ involves Project emissions from fossil fuel consumption and project emissions from electricity consumption as follows:

$$PE_{y,power} = EC_y + EF_{CO_2,ELEC} * (1 + TDL) + FC_{Diesel,y} * NCV_{Diesel} * EF_{CO_2}$$

Where:

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| | |
|------------------|---|
| $PE_{y,power}$ | Emissions from electricity and fossil fuel consumption in the year y (tCO ₂ e) |
| EC_y | Electricity consumption from Project equipment items in the year y (MWh) |
| $EF_{CO_2,ELEC}$ | CO ₂ emission factor for electricity (tCO ₂ e/MWh) |
| TDL | Transmission and distribution losses |
| $FC_{Diesel,y}$ | Consumption of diesel fuel in the year y (kl) |
| NCV_{Diesel} | Net calorific value for diesel fuel (GJ/kl) |
| EF_{CO_2} | CO ₂ emission factor for diesel fuel (tCO ₂ e/GJ) |

Methane emissions related to composting process, $PE_{y,comp}$, are calculated according to the methodology as follows:

$$PE_{y,comp} = Q_y * EF_{composting} * GWP_{CH_4}$$

Where:

| | |
|-------------------|--|
| $PE_{y,comp}$ | Methane emissions related to composting process in the year y (tCO ₂ e) |
| Q_y | Quantity of waste material that is composted in the presence of less than 8% oxygen |
| $EF_{composting}$ | Emission factor for composting of organic waste and/or manure (t CH ₄ /ton waste treated) (tCH ₄ /t waste treated) |
| GWP_{CH_4} | GWP for CH ₄ |

This PoA applies the following option offered in the methodology:

"EF_{composting} can be set to zero for the portions of Q_y for which the monitored oxygen content of the composting process is above 8%"

Therefore, $EF_{composting}$ has a non-zero value only for the portion of the compost that is generated anaerobically – with a monitored oxygen content below 8%. As per the methodology, this will be monitored via sampling with maximum margin of error of 10% at a 90% confidence level, following the criteria stated in the Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities version 03. According to this the CME has clarified the name of the parameters included in the formula as follows:

$$PE_{y,comp} = Q_{y, portion} * EF_{composting} * GWP_{CH_4}$$

Where:

| | |
|------------------|---|
| $Q_{y, portion}$ | Portion of the total weight of wastes to be composted in year y on a wet basis (tonne), that is produced with a monitored oxygen content below 8%. (tonnes) |
|------------------|---|

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Methane emissions related to runoff water, **PE_{y,runoff}**, are calculated according to the methodology as follows:

$$PE_{y,runoff} = Q_{y,ww,runoff} * COD_{y,ww,runoff} * B_{o,ww,runoff} * MCF_{ww,runoff} * UF_{b,runoff} * GWP_{CH_4}$$

Where:

| | |
|-----------------------|---|
| $BE_{ww,treatment,y}$ | Baseline emissions from the wastewater co-composted |
| $Q_{y,ww,runoff}$ | Volume of runoff water in the year y (m ³) |
| $COD_{y,ww,runoff}$ | Chemical oxygen demand of the runoff water leaving the composting facility in the year y (tonnes/m ³) |
| $B_{o,ww}$ | Methane producing capacity of the wastewater (kg CH ₄ /kgCOD) |
| $MCF_{ww,runoff}$ | Methane correction factor for the wastewater treatment system where the runoff water is treated |
| $UF_{b,runoff}$ | Model correction factor to account for model uncertainties (1.12) |
| GWP_{CH_4} | GWP for CH ₄ |

In order to avoid confusions between Baseline emission formulae and Project emission formula , the CME has included the additional subscript "runoff" in the variables used in the above equation.

Leakage

The technology used in this PoA does not include any equipment transferred from other activities nor will any existing equipment is transferred to another activity. Therefore, as per paragraph 21 of the applied methodology AMS III.F v10.0, leakage does not apply to this PoA.

Based on the above assessment, AENOR confirms that that:

- All assumptions and data used by the CME are listed in the PoA-DD and CPA-DD, including their references and sources;
- All documentation used by the CME as the basis for assumptions and source of data is correctly quoted and interpreted in the PoA-DD and CPA-DD;
- All values used in the PoA-DD and CPA-DD are considered reasonable 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 emissions can be replicated using the data and parameter values provided in the PoA-DD and CPA-DD.

3.6 Additionality

3.6.1 Starting date of the Programme of Activities

According to the final PoA-DD the starting date of the programme is 20/12/2011, the date when the CDM-POA-DD was first published for GSC, which is correct according to the *"Glossary of terms"* version 07.0 and then, accepted by the validation team of AENOR.

3.6.1.1 Additionality of the Programme of Activities

The additionality of the programme has been presented in section A.4.3 of the PoA-DD. The approach used in the PoA-DD has been assessed initially through the document review followed by on-site discussions. Finally, the data, rationales, assumptions, justifications, and documentation provided have been verified using local knowledge as well as sectoral and financial expertise.

During the validation process CAR 7, CAR 8, and CL 1 were raised regarding the assessment and demonstration of the additionality of the PoA and typical SSC-CPA explained in the first version of the PoA-DD. Finally, all issues requested to the PPs have been resolved in opinion of the validation team since the new criteria and assumptions considered fulfil with the CDM requirements for additionality purposes of programme of activities. Therefore CAR 7, 8 and CL 1 were closed.

The proposed PoA is a voluntary action by the coordinating/managing entity – Gestora de Programa Marco Palma, S.L. Based on the submitted documents and substantiation it is evident that this voluntary coordinated action would not be implemented in the absence of the PoA.

It has been clearly demonstrated that there is no mandatory policy or regulation in the host country (Ecuador) enforcing the implementation of composting as means of avoiding POME and EFB generation by converting them into a useful product. This was confirmed based on the on-site interviews and evidence provided during the validation process.

As the PoA-DD establishes in its section A.4.3, the PoA chooses to demonstrate the additionality at CPA level. For each CPA prior to its inclusion, its additionality will be proved based on investment comparison analysis to demonstrate the investment barrier to implement each CPA according to the eligibility criterion nº 10.

However, the PoA-DD details at PoA level, background information on an investment barrier and prevailing practise barrier, not as a demonstration of additionality, but for a better understanding of the context of the additionality for a CPA.

Prevailing Practice Barrier is based on information provided by PPs and checked by AENOR [21] [22]. According to evidence provided, the anaerobic wastewater treatment systems are the common practise for managing the POME in Ecuador. It is not required by Law in Ecuador to capture or avoid this methane production from POME. Nevertheless, the implementation of anaerobic treatment lagoons would lead to higher emissions.

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Regarding the investment barrier, based on the reports by ANCUPA/23/ the average size plot of palm plantation in Ecuador is 39 Ha, very small and well different of size plots in Indonesia and Malaysia where they are measured in thousands of Has. It means that these palm farms are in many cases subsistence farming. Taking into account this scenario, the PoA-DD considered as eligibility criteria that CPAs sell compost at its cost to the plantations that supply the palm oil mill. This way the PoA ensures a social benefit, although indirectly from CDM, to the small palm farmers in rural areas. However, selling the compost at its costs is very unlikely that the returns on capital investment exceed a standard market benchmark.

As it is mentioned above, the additionality is demonstrated at CPA level as section A.4.3 of the PoA-DD states. In addition, the PoA-DD establishes in Sections A.4.2.2 (eligibility criteria 9 and 10) and E.5 the conditions that ensure that CPAs meet the requirements pertaining to the demonstration of the additionality.

Accordingly the PPs can follow the indications described in these sections of the PoA-DD at the time of CPA inclusion; same has been validated as follows:

Demonstration of additionality includes the application of the investment barrier of the "Guidelines on the Demonstration of Additionality of Small-Scale project activities" v.9. Investment barrier will be demonstrated by investment comparison to show that the alternative to the project activity would have led to higher emissions and results more economically attractive than the proposed project activity. This option is considered as appropriate for the proposed POA, for cases where the baseline requires investment and is more conservative than a benchmark analysis for cases where the baseline scenario does not require investment. The baseline scenarios for all CPAs will include POME management costs and some CPAs might also require investment in their baseline scenarios (Greenfield palm oil mills and existing mills that require additional treatment capacity), thus, the NPV of all baseline scenarios will be negative. Therefore, the investment comparison is more conservative than a benchmark analysis, since the former requires the project scenario NPV to be less than a negative number, whereas the latter would only require the project scenario NPV to be less than zero.

The financial indicator chosen is net present value (NPV) of the net cash flows for the two scenarios a) Baseline: anaerobic treatment lagoons for POME and b) Project: Co-composting of EFB and POME without CER revenue. Additionality is demonstrated through investment comparison for each CPA if the NPV net cash flows of the project scenario is lower than the NPV net cash flows of the baseline.

The financial indicator (NPV) shall be calculated following Guidance on the Assessment of Investment Analysis (Version 05).

The general approach described in the PoA-DD has been assessed initially through the document review followed by on-site discussions.

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As the CPA applies a small scale methodology, therefore it is mentioned that the additionality has been demonstrated using the guidance given in "Guidelines on the demonstration of Additionality of Small-Scale Project Activities, version 09". Based on the assessment above, the PoA is assessed to be additional by the validation team of AENOR.

3.6.1.2 Additionality of a typical SSC-CPA

The additionality of the PoA has been presented on a CPA level. Section E.5 of the POA-DD details how the additionality of each CPA will be demonstrated and details the key parameters and data to be considered for the additionality. Therefore, the investment analysis shall be conducted in line with the provisions in section E.5 of the POA-DD and following the "Guidelines on the assessment of the investment analysis" v.5.

Additionality of a CPA under the co-composting POA would be determined in accordance with the Guidelines on the demonstration of Additionality of Small-Scale Project Activities, version 09 by barriers analysis. The investment barrier will be assessed individually for each CPA based on investment comparison analysis because of the project generates financial benefits other than CDM-related income.

The net present value (NPV) has been chosen as the financial indicator for the comparison of the baseline scenario and project scenario. The indicator shall be calculated as per Guidelines of the Assessment of Investment Analysis, version 5. The basis of the analysis is equity cash flow (after tax, after interest and loan repayment, considering equipment depreciation for tax purposes but not as a cash flow as per guidelines of investment analysis). The period of assessment for the comparison analysis shall be 10 years which coincides with the expected technical lifetime of the major equipment item (Windrow turner), although it's accounting lifetime is less. At the end of this period, a CPA could remain operational if a new Windrow turner is purchased, since the investment in fixed plant is expected to have a life of some 25 years. A residual value shall be applied to assets that are not fully depreciated at the end of the assessment period.

The composting plants could be developed by the host palm oil mill owner or by a third-party waste manager. Therefore, the discount rate should be a standard value in the market. Thus, following paragraph 15 of the "Guidelines on the Assessment of Investment Analysis" v5 from EB62 annex 5, group 1, the expected return on equity has been selected as per appendix A of the guidelines, then, it is accepted by AENOR. The values are consistent with the basis of the financial analysis (after tax, equity basis, and real). The investment comparison has been carried out using an equity discount rate after taxes of 17 % for Ecuador. This equity discount rate applied to calculate NPV is after tax and real, and thus consistent with the equity basis of the analysis.

All input values to be used in the financial model will be listed in each CDM-SSC-CPA-DD and they will be valid at the time of investment decision. The adopted approach has been checked for the real case CPA submitted along with the PoA -DD. The financial spreadsheet calculation of the real case CPA has also been presented which confirms that the NPV of the project is lower than the NPV of the other scenario, i.e, the baseline scenario.

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The Operating costs of WWTP for existing host palm oil mills will be derived from accounting records, if available. In case of Greenfield mills, operating costs will be taken from the WWTP design documentation, if available. If this value is not available, Existing or Greenfield mills could use the value, US\$ 0.11 per cubic meter. This value is the higher between several technical sources provided by the PP and checked by AENOR, such as <http://www.costwater.com> (US\$ 0.11) [25], CDM Project: Palmeras POME Co-Composting Project [26] at validation stage in Colombia (US\$ 0.11) and, Juan Diez Waste Water Treatment Plant [27] (0.085 US\$).

Depreciation period has been defined for the host country, Ecuador, using the official regulation. AENOR checked the official Decree 1051, 2008 for Ecuador [28], and confirmed that values considered are consistent with ones shown in the POA-DD and they are applicable and valid at validation of the PoA. However, values applied in each CPA will be the applicable at the investment decision date of each CPA according to the official regulations in the host country, then; depreciation periods will not be fixed.

On the other hand, taxation in Ecuador is 33.7%. This value is based on the Ecuadorian corporate tax rate of 22% as per the Production Code of 2010 plus 15% as per Workers' Code of 2005 [29]. Since the 15% profit sharing is mandatory and deductible, the effective tax rate is $15\% + 85\% \times 22\% = 33.7$. AENOR has checked that the effective corporate tax is also considered by the World Bank in its 2010 Report 46551 [30] entitled "Ecuador: Diversification and Sustainable in an Oil-Dependent Country". AENOR checked the provided data sources and confirmed that values in POA-DD are consistent with sources and valid at the validation of POA. For each CPA tax values to be applied will be the ones applicable at the investment decision date.

The compost selling price, as per PoA eligibility criteria No. 9, shall be its cost. The compost selling price will be determined in the calculations by summing the operating costs, annual depreciation, and taxes, and then dividing the result by the expected compost production. This represents the full accounting costs of the compost. For each CPA a signed declaration by the CPA Implementer will be provided to confirm that compost price matches with its cost as the eligibility criteria 9 states.

Sensitivity analysis: The Guidance on assessment of investment analysis requires the robustness of the conclusion arrived at to be proved through a sensitivity analysis by varying the critical assumptions to a reasonable variation ($\pm 10\%$). Accordingly the PPs have identified the investment costs and, operating costs for both the baseline and project scenarios. In the case of operating costs, the variations could occur due to variations in physical volumes of effluents treated or in the unit prices. An additional sensitivity analysis will be carried out in order to identify under what conditions variations in the result would occur that the project scenario becomes more attractive than the baseline.

The additionality is therefore demonstrated at CPA level as per aforementioned approach. The barrier shall be applicable to all the CPAs within the geographical boundary of the host country, Ecuador. Key parameters and data needed to complete the investment analysis are specified in the PoA-DD and they are deemed correct and credible in line with the applicable UNFCCC requirements.

3.7 Monitoring Plan

3.7.1 Compliance of the monitoring plan with the approved methodology

The monitoring plan presented in the PoA-DD complies with the requirements of the applicable methodology, AMS III.F version 10.0. The assessment team has verified all parameters in the monitoring plan against the requirements of the methodology and no deviations have been found.

As stated above, the PoA and CPA use the approved methodology AMS-III.F version 10.0 for avoidance of methane emissions through composting.

During the validation process AENOR has verified that the parameters to be monitored, according to the applied methodology and tools, under the proposed programme of activities are consistent with the project description in the PoA-DD. In addition the PoA-DD clearly explains the quality control and quality assurance to apply for monitoring activities, including the metering equipment and calibration requirements.

Therefore, the applicability of this methodology is justified in the final PoA-DD as it involves avoidance of methane emissions through composting POME.

The final PoA-DD clearly identifies the parameters to monitor in compliance with the applicable methodology:

| Parameter | Monitoring frequency | Remarks |
|--|---------------------------|--|
| MD_{y,reg} Amount of methane that would have to be captured and combusted in the year y to comply with the prevailing regulations | At the time of validation | Informal consultation with environmental ministry to confirm regulatory analysis. |
| GWP_{CH₄} : Global warming potential of methane. | At the time of validation | Default value based on IPCC Guidelines. As per the "Standard for application of the global warming potential to Clean Development Mechanism project activities and programmes of activities for the second commitment period of the Kyoto Protocol" version 01.0, this value will be updated effective 01/01/2013 to be in accordance with decision 4/CMP.7. |
| W_{j,y} : Amount of organic waste type j composted in year y, including j = compost produced. | Continuously | EFB weight will be cross-checked against Fresh Fruit Bunch (FFB) within the plant's data management system. |
| Q_{ww,y} Volume of wastewater entering the co-composting facility in the year y (POME) | Continuously | POME volume will be tracked against Fresh Fruit Bunch (FFB) |
| BOD_{inflow,y} Biological oxygen demand of the wastewater entering the co-composting facility. | - | To be determined for each CPA via a sampling plan described below in order to achieve a precision of 10% at a 90% confidence interval according to the "Standard for sampling and surveys for CDM project activities and programme of activities" v03. |

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| Parameter | Monitoring frequency | Remarks |
|---|----------------------|---|
| EC_y : Electricity consumption from project equipment items in the year y | Continuously | On site electricity meter. Electricity consumption will be tracked against compost production. |
| FC_{Diesel,y} : Consumption of diesel fuel from project equipment in the year y | Continuously | All onsite diesel consumption is measured and assigned to operational cost centres. This data can be cross-checked through accounting records. |
| NCV_{Diesel} : Net calorific value of diesel fuel in volumetric units | - | Data source for this parameter is chosen since NCVs are not reported on purchases of commercial liquid fuels, only volumes. The IPCC value of 43.3 GJ/t (95% confidence level upper value, table 1.2, Volume 2, 2006 Guidelines) is converted to volumetric units as required by the applicable tool (am-tool-03- v2) using 0.8397 kg/l (Reece, Mieke. Densities of Oil Products. IEA, Paris. Nov 2004), published by the International Energy Agency and thus well documented and reliable as per data source c) for density within the referenced tool. |
| EF_{CO₂,Diesel} Emission factor for diesel fuel. | - | Default IPCC value at validation is 0.0748 tCO ₂ /GJ (95% confidence level upper value, table 1.4, Volume 2, 2006 Guidelines). |
| Q_{y,Portion} : Portion of waste material that is composted in the presence of less than 8% oxygen | Monthly | Sampling plan according to the "Standard for sampling and surveys for CDM project activities and programme of activities" v03. This variable is determined by multiplying the total volume of waste to be composted (W) by the fraction produced in the presence of less than 8% oxygen. |
| Q_{y,ww,runoff} Volume of runoff water in the year y | Continuously | - |
| COD_{y,ww,runoff} Chemical oxygen demand of the composting facility's runoff water in the year y | - | To be determined for each CPA via a sampling plan in order to achieve a precision of 10% at a 90% confidence interval according to the "Standard for sampling and surveys for CDM project activities and programme of activities" v03. 0.001 for ex ante calculation according to the applied methodology. |
| Compost Quality Control Programme | - | - |
| Adequate Soil Application of Compost | Monthly | The compost will be applied to plantations in thin layers to assure aerobic decomposition. Photographic evidence will be collected annually on a "representative sample of user sites" (as per part 25 of AMS III.F v10.0) to document the adequate soil application of compost. |
| Compost Price | - | As per Eligibility criteria No. 9 requires that compost be sold at cost to the plantations. The CME publishes guidelines to calculate the compost selling price. The financial auditor of each CPA will provide assurance that this cost is correctly calculated. |

Roles and responsibilities, training actions, archiving, measuring and calculation procedures, equipment details, and calibration requirements are clearly mentioned in the PoA-DD.

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AENOR has validated that the Sampling Plan presented in the PoA-DD includes the objectives, data to be collected, target population, sampling frame, sample method, sample size, procedures for administering data collection and minimizing errors, and implementation details.

AENOR; has also verified that for the Compost Pile Oxygen Content and for the Biological and Chemical Oxygen Demand, monitoring will be carried out through sampling and the sampling size will be selected following a 90% confidence interval and a 10% margin of error (90/10), according to the Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities, version 03.0. AENOR has been able to reproduce the sample size calculation obtaining the same result, and considers the proposed sample size and sampling method is conservative and adequate to achieve the minimum confidence/precision requirements. The sample size is calculated through the simple random method and it is representative for each parameter to be monitored under this procedure.

Therefore, AENOR by his experience and the assessment of the documentation considers:

- The sampling plan presents a reasonable approach for obtaining unbiased, reliable estimates of the variables. The monitoring of some parameters will be carried out by sampling and the sample size will be selected following the "Standard for sampling and surveys for CDM project activities and programme of activities" version 03.0. These requirements are in accordance with the requirements set forth in the methodology therefore the approach is considered correct.
- The sampling plan stated in the PoA-DD will ensure that samples are randomly selected and are representative of the population. The sampling will be applied and the precision will be established in accordance with recommended values by UNFCCC.
- The proposed sampling approach is clear. Sampling will be employed proportionate to cluster size, therefore AENOR considers that the sampling approach is clear.
- The sample size is representative for each parameter to be monitored under this procedure. A minimum sample size of 30 samples will be chosen in the cases where the sample size obtained is less than 30, according to part 12, "Standard for sampling and surveys for CDM project activities and programme of activities" version 03.0.

AENOR considers that the proposed sample sizes and sampling methods are adequate to achieve the minimum confidence/precision requirements. Data collection/measurement method is likely to provide reliable data.

Training will be given to staff responsible for the data collection system and a quality control and assurance strategy plan will be established, therefore AENOR considers it correct.

The procedures for data measurements are well defined. As stated above a strategy plan will be established. This strategy includes a planning phase in which a clear definition of the target population, sampling frame and sample size are determined

Therefore, in opinion of the AENOR team, all necessary parameters required by the selected approved methodology are contained in the monitoring plan. They are clearly described and comply with the requirements of the methodology. The monitoring of the parameters involved in the emission reductions has been established in a transparent and clear way. Thus, the monitoring plan is in compliance with the requirements of the applied methodology.

3.7.2 Implementation of the Monitoring Plan

After the review of evidence provided by the PPs, the interview and communications with PPs, AENOR confirms that monitoring arrangements described in the monitoring plan are feasible within the project design and that the means considered for the implementation, including data management, quality and assurance control procedures, are sufficient to ensure that the emission achieved resulting from the proposed PoA can be reported ex post and verified.

Finally, AENOR considers that the CME is able to implement the monitoring plan stated in the PoA-DD taking into account all the reasons explained above.

3.8 Comments by Local Stakeholders

The geographical region covered by this PoA is deemed too large to correctly identify all potential local stakeholders. Therefore, local stakeholder consultations are carried out for each CPA prior to its inclusion in this PoA. Due account of any comments received is considered as well at the CPA level.

3.9 Environmental Impacts

Environmental Analysis is chosen to be done at CPA level.

The site-specific environmental conditions at individual CPAs could affect an EIA. Therefore, environmental analysis will be carried out at the CPA level and reported in each CDM-SSC-CPA-DD.

Thus, each and every CPA will have the relevant permits and licences ensuring the compliance with the relevant applicable regulation.

4 SPECIFIC PROGRAMME OF ACTIVITIES REQUIREMENTS

4.1 Operational Management and Verification Plan

Management structure of the monitoring plan is defined in Section A.4.4 of the PoA-DD.

The operational and management plan for this PoA is based on written procedures and guidelines to facilitate the multinational operational requirements of the CME.

According to paragraph 19 of the *"Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities"* Version 02.1; the CME has developed and implemented a Management System [18] which has been provided to the DOE team at the time of validation. AENOR has verified that CME's management system is structured into high level management

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procedures, operational procedures and operational tools and guidelines. AENOR assessed the components the elements of the Management System and confirms that includes the following:

- a) A clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies.
- b) Records of arrangements for training and capacity development for personnel;
- c) Procedures for technical review of inclusion of CPAs;
- d) A procedure to avoid double counting
- e) Records and documentation control process for each CPA under the PoA;
- f) Measures for continuous improvements of the PoA management system;

Operational management and verification plan in the final PoA-DD is assessed to be appropriate for the purpose of the programme monitoring. The overall responsibility for the monitoring will be held by "Gestora de Programa Marco de Palma S.L."

The CME will collect the information submitted by each CPA of the PoA. All monitoring data will be stored and archived. Emission reduction calculation of each CPA will be based on data collected and analyzed by Gestora de Programa Marco de Palma S.L according to the Management System developed for de proposed PoA and provided to the validation team [18].

The database is confirmed as the data management system designed specifically for the PoA to ensure the data accuracy, to avoid double counting, to addressing uncertainty (QA/QC), and to manage monitoring data storage for the monitoring of all CPAs. Furthermore, a procedure to ensure that new CPAs are not a de-bundled component of another CPA or CDM project activity, has been developed according to eligibility criteria nº 4 and to the "Guidance for determining the occurrence of de bundling under a programme of activities" (EB 54, Annex 13).

4.2 Criteria for Inclusion of SSC-CPA in the PoA

According to paragraphs 15, 16 and 17 of the *"Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities"*. Version 02.1; the CME has developed the eligibility criteria for inclusion of a CPA under the PoA. A procedure to crosscheck that all the eligibility criteria fulfil the requirements of the Standard [19] has been developed by the CME, under the PoA Management System, and has been validated by AENOR.

A complete list of CPA Eligibility Criteria has been set up in section A.4.2.2 of the final PoA-DD and section B.2 of the generic CPA-DD. The list has been validated is deemed appropriate and sufficient according to the criteria specified in paragraph 16 of the Standard:

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1. POME will be co-composted with EFB utilizing the Windrow technology. This criterion will be verified assessing the Compost plant design documentation. This criterion satisfies epigraph e) stated in paragraph 16 of the Standard.
2. The compost plant is newly built, not an expansion of an existing compost plant, excluding those for research, development or demonstration. This criterion will be verified assessing the Compost plant design documentation the on site visit. This criterion satisfies epigraph e) stated in paragraph 16 of the Standard.
3. The compost plant is constructed within the physical boundaries of a host palm oil mill or on a nearby waste management facility within the host country (Ecuador). The host palm oil mill can be either an existing facility or a new (greenfield) facility. This criterion will be verified assessing the Compost plant design documentation the on site visit. This criterion satisfies epigraphs a), b) and i) stated in paragraph 16 of the Standard.
4. The EFB and POME for the CPA is not involved in another composting project that is registered or under validation as a CDM project activity or as a CPA under another PoA. The SSC CPA is not a debundled component of a large project activity, as defined by applicable CDM guidelines. This criterion will be verified by a signed declaration by CPA Implementer; and will be crosschecked by CME through comparison with the CDM web site. This criterion satisfies epigraphs b) and l) stated in paragraph 16 of the Standard.
5. Emission reductions will be accrued only for methane avoidance from POME, not for EFB or any other biomass that co-composted. This criterion will be verified assessing the CPA-DD and its annexed spreadsheet. This criterion satisfies epigraph e) stated in paragraph 16 of the Standard.
6. The ex-ante estimate of emission reductions is less than 60 kt CO₂e for each year of the crediting period. This criterion will be verified assessing the CPA-DD and its annexed spreadsheet. This criterion satisfies epigraphs e) and k) stated in paragraph 16 of the Standard.
7. Except in Greenfield Palm Oil Mills, POME is currently treated in anaerobic wastewater treatment lagoons. The physical characteristics, operational design, and precise location of the lagoons are documented. This criterion will be verified assessing the WWTP design documentation. This criterion satisfies epigraphs e) and f) stated in paragraph 16 of the Standard.
8. For Greenfield Palm Oil Mills, in the absence of the CPA, POME would be treated in onsite, in anaerobic wastewater treatment lagoons. Engineering studies document the physical characteristics and associated costs of such lagoons. This baseline is confirmed through the 4-step process for SSC project activities. This criterion will be verified assessing the WWTP design documentation. This criterion will be verified assessing the WWTP design documentation. This criterion satisfies epigraphs e) and f) stated in paragraph 16 of the Standard.

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9. The compost will be sold to at cost and applied on the plantations that supply the mill. This criterion will be verified assessing a Signed declaration by CPA Implementer. This criterion will be verified assessing the WWTP design documentation. This criterion satisfies epigraphs e) and f) stated in paragraph 16 of the Standard.
10. The additionality of the CPA is demonstrated via the investment barrier as per the "Guidelines on the demonstration of additionality of small-scale project activities" v09 as follows: An investment comparison analysis carried out according to applicable guidelines for the CPA's site specific conditions demonstrates that the net present value of cash flows from the CPA compost plant, in the absence of CER income is less than the net present value of cash flows for POME treatment in anaerobic lagoons.
11. Except for Greenfield Palm Oil Mills, the POME treated by the CPA is included in a valid discharge permit, environmental license, or equivalent. This criterion will be verified assessing the discharge permit, environmental license, or equivalent. This criterion satisfies epigraph g) stated in paragraph 16 of the Standard.
12. The host palm oil mill or waste management facility has carried out an Environmental Impact Assessment (EIA) or can demonstrate that it is not required under national law. This criterion will be verified assessing EIA and official notification of EIA approval; or a written demonstration that EIA is not required. This criterion satisfies epigraph g) stated in paragraph 16 of the Standard.
13. The project activity is a voluntary action by the CPA participants and not required by national law. This criterion will be verified assessing a Signed declaration by CPA Implementer.
14. The design of the composting plant satisfies all of the following criteria:
 - a. It will be covered to avoid infiltration of rainwater. This criterion satisfies epigraph c) stated in paragraph 16 of the Standard.
 - b. Rainwater, if not segregated from leachate, will be treated as leachate. This criterion satisfies epigraphs c) and g) stated in paragraph 16 of the Standard.
 - c. All leachate will be collected and treated to meet discharge standards or recycled to the composting plant. This criterion satisfies epigraphs c) and g) stated in paragraph 16 of the Standard.
 - d. Leachate permeation from composting plants will be avoided through an impermeable top layer (i.e. concrete), inner layer (i.e. geomembrane) and/or soil compaction. If compaction is used, potential soil contamination should be monitored in a downgradient well. This criterion satisfies epigraphs c) and g) stated in paragraph 16 of the Standard.
 - e. Compost, once produced, will not undergo thermal / mechanical treatment. This criterion satisfies epigraphs c) and e) stated in paragraph 16 of the Standard.

This criterion will be verified assessing the Compost plant design documentation.

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15. The operation of the composting plant will satisfy all of the following criteria:
- a. Aerobic composting conditions will be demonstrated through a quality control program.
 - b. Process variables will be monitored as per the monitoring protocol.
 - c. The adequate soil application of compost on the plantations will be monitored as per the monitoring protocol.
 - d. Compost, once produced, will not be stored in anaerobic conditions.
- This criterion will be verified assessing the Compost quality control program initial specifications, Monitoring protocol between CPA Implementer and CME and the Compost plant design documentation. This criterion satisfies epigraphs c) and e) stated in paragraph 16 of the Standard.
16. The CPA participant has carried out a local stakeholder consultation in accordance with national CDM requirements and CME guidelines. This criterion will be verified assessing Local stakeholder consultation report. This criterion satisfies epigraph g) stated in paragraph 16 of the Standard.
17. For Greenfield Palm Oil Mills, the palm oil plantations that are under long-term relationships (either contractually or through ownership with the palm oil mill or any of its shareholders) were previously farmlands (either agriculture or livestock) or were classified as degraded lands by national or international agencies. New palm oil mills that are associated with plantations on recently deforested lands or peatlands are expressly ineligible for CPAs under this PoA. This criterion will be verified assessing the list of palm plantations under long-term relationships, maps showing locations of palm plantations under long-term relationships and maps or studies by national or international agencies showing land use and/or land degradation. This criterion satisfies epigraph g) stated in paragraph 16 of the Standard.
18. The sources of financing the investment in the CPA are known. There is neither ODA/public funding from Annex I Parties of UNFCCC nor bilateral or multilateral funding under concessionary terms involved in the CPA. This criterion will be verified assessing a Signed declaration by CPA Implementer. This criterion satisfies epigraph h) stated in paragraph 16 of the Standard.
19. The Windrow turner purchase order and the civil works contract, if they exist at inclusion, demonstrate that the CPA start date is not prior to 20/12/2011. This criterion will be verified assessing the windrow turner purchase order and Civil works contract. This criterion satisfies epigraph d) stated in paragraph 16 of the Standard.
20. The CPA has submitted all information required by the DNA. This criterion will be verified assessing the agreement between CME and DNA specifying CPA information to be submitted; and written evidence of submission.
21. The CPA has supplied one of the following documents to establish the baseline WWTP removal efficiency:

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- a. Historical records of at least one year.
- b. If the WWTP does not have one year of historical records, then all historical records of removal efficiency plus a 10-day measurement campaign of removal efficiency
- c. For Greenfield Palm Oil Mills A 10-day measurement campaign of removal efficiency of the WWTP at another palm oil mill that uses the same process technology and has a hydraulic retention time of $\pm 20\%$ of that specified in the documentation for criteria 8
- d. [Greenfield Palm Oil Mills] Value provided by the manufacturer /designer of a Greenfield wastewater treatment plant using the same technology, demonstrated to be conservative, e.g. average values from the top 20 percent plants with lowest emission rate per ton COD removed among the plants installed in the last five years designed for the same country/region to treat the same type of wastewaters as the project activity

This criterion will be verified assessing the documents stated in paragraph a-d) above. This criterion satisfies epigraph e) stated in paragraph 16 of the Standard.

Each CPA will have to demonstrate the additionality individually at CPA level and this will be checked at the CPA level by the managing entity and can be confirmed by the DOE during inclusion. Every CPA will have to meet all the criteria to ensure eligibility to participate in this PoA.

AENOR confirms that the eligibility criteria for this PoA developed by the CME, are verifiable and sufficiently objective and comprehensive to permit the assessment of the inclusion of CPAs under this PoA.

4.3 Provisions in case the eligibility criteria shall be updated

Provisions regarding updating eligibility criteria have been established in the PoA-DD in accordance with the *"Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities"* Version 02.1, eligibility criteria will be updated by the CME in the following cases:

- a) If the version of methodologies applied by the PoA is revised or replaced, subsequent to being placed on hold:
 - The CME will update the eligibility criteria to the requirements of the revised or new methodologies immediately
 - A new version of the PoA DD and generic CDM-CPA-DD containing updated eligibility criteria validated by a DOE will be submitted to the Board for approval.
 - Once changes have been approved by the Board, the inclusion of all new CPAs will be based on the updated eligibility criteria applying the new generic CDM-CPA-DD;
 - CPAs that were included before the methodology was put on hold shall will the revised version of the generic CDM-CPA-DD only at the time of the renewal of the crediting period.

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- No action is required if the version of methodologies applied by the PoA is revised without being placed on hold or is withdrawn for the purpose of inclusion in a consolidated methodologies, unless otherwise indicated in the respective report of the meeting of the Board that has approved the new methodologies.
- b) If the boundary of the PoA is amended post-registration to expand the geographic coverage or to include one or more additional host Parties:
- The CME will update the eligibility criteria to reflect the consequent changes
 - A new version of the PoA DD and generic CDM-CPA-DD containing updated eligibility criteria validated by a DOE will be submitted to the Board for approval.
 - Once changes have been approved by the Board, the inclusion of all new CPAs will be based on the updated eligibility criteria applying the new generic CDM-CPA-DD;
 - CPAs that were included before the revision of the eligibility criteria will apply the revised version of the generic CDM-CPA-DD only at the time of the renewal of the crediting period.
- c) If an issue related to environment integrity is identified by the EB:
- The CME will update the eligibility criteria to reflect the consequent changes
 - A new version of the PoA DD and generic CDM-CPA-DD containing updated eligibility criteria validated by a DOE will be submitted to the Board for approval.
 - Once changes have been approved by the Board, the inclusion of all new CPAs will be based on the updated eligibility criteria applying the new generic CDM-CPA-DD;
 - CPAs that were included before the revision of the eligibility criteria will apply the revised version of the generic CDM-CPA-DD only at the time of the renewal of the crediting period.
- d) At the renewal of the crediting period of a PoA (at the renewal of the first CPA),
- The CME will update the eligibility criteria as per the latest revised applicable methodologies
 - A new version of the PoA DD and generic CDM-CPA-DD containing updated eligibility criteria validated by a DOE will be submitted to the Board for approval.
 - Once changes have been approved by the Board, the inclusion of all new CPAs will be based on the revised eligibility criteria
 - CPAs that were included before the revision of the eligibility criteria will apply the revised version of the generic CDM-CPA-DD only at the time of the renewal of the crediting period.
 - The subsequent CPAs requesting the renewal of the crediting period shall apply the revised version of the generic CDM-CPA-DD.

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In AENOR's opinion provisions regarding updating eligibility criteria established by the CME are in line with the requirements of the *Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities* Version 02.1.

5 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

According to Decision 3/CMP.1, the validator shall make the PoA-DD, specific CPA-DD and generic CPA-DD publicly available and receive, within 30 days, comments on the validation requirements from parties, stakeholders and UNFCCC accredited NGOs, and must also make those comments publicly available.

AENOR published the project document on CDM website, on 20/12/2011 and invited comments by parties, stakeholders and non-governmental organisations. No comments were received during this period.

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6 VALIDATION OPINION

AENOR has performed a validation of the Programme of Activities "**Promotion of POME and EFB Co-Composting**". The validation was performed on the basis of UNFCCC criteria and host country criteria, as well as criteria given for the Programmes of Activities to provide for consistent operations, monitoring and reporting.

The validation consisted of the following three phases: i) a desk review of the programme design, the baseline and the monitoring plans; ii) follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final validation report and opinion. In the course of the validation process, 8 corrective actions and 2 clarifications were raised; all have been successfully closed.

The review of the programme design documentation and additional documents related to baseline and monitoring methodology, and the subsequent background investigation, follow-up interviews and review of comments by parties and stakeholders have provided AENOR with sufficient evidence to validate the fulfilment of the stated criteria.

The conclusions can be summarised in detail as follows:

- The PoA is in line with all the relevant host country criteria of Ecuadorian DNA, with the Letter of Approval from Ecuador and with all relevant UNFCCC requirements for Programme of Activities. The LoA from Ecuador is dated on 20 August 2012.
- The operational and management plan established by the coordinating entity is suitable for the PoA validated.
- The baseline has been appropriately identified as per the applied methodology.
- Eligibility criteria in the PoA-DD are sufficient to ensure that all CPAs would comply with the CDM requirements applicable to the PoA. These requirements include the means of demonstrating the additionality of the CPA and the applicability of the applied methodology.
- The programme's additionality is sufficiently justified in the PoA-DD.
- The monitoring plan and the Operational and Management Plan are transparent and adequate.
- The calculation of validated CPA emission reductions has been carried out in a transparent and conservative manner, following the approved methodology AMS-III.F version 10.0.
- Information on the local stakeholders' consultation by the project participants prior to submitting the PoA for validation is sufficiently provided in the PoA-DD.
- All information has been also consistently applied in the generic CPA-DD form.

In our opinion, the Programme correctly applies and meets the relevant UNFCCC requirements for the CDM Programme of Activities and the relevant host country criteria.

VALIDATION REPORT

"Promotion of POME and EFB Co-Composting"

The validation has been performed using a risk based approach, as described above. The only purpose of this report is its use during the registration process as part of the CDM project cycle. Hence, AENOR cannot be held liable by any party for decisions made or not made based on the validation opinion, which would go beyond the purpose.

27/12/2012



Luis Robles Olmos

Authorized person

27/12/2012



Alfonso Medrano Gutiérrez

Chief Validator

VALIDATION REPORT

"Promotion of POME and EFB Co-Composting"

7 CORRECTIVE ACTION REQUESTS, CLARIFICATIONS AND FORWARD ACTION REQUESTS

| | | | |
|--|---|---|------------------------------|
| TITLE | Promotion of POME and EFB Co-Composting | | |
| FINDING | CAR 1 | | |
| Classification | CAR <input checked="" type="checkbox"/> | CL <input type="checkbox"/> | FAR <input type="checkbox"/> |
| Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i> | The Letters of Approval from Ecuador and Colombia shall be provided to the DOE team. | | |
| PP RESPONSE #1 | <i>This section shall be filled by the PP.</i> | | |
| <i>It shall address the corrective action taken in details</i> | The LoA from Ecuador has been provided. Colombia has been deleted as a host country for this PoA and therefore the LoA from Colombia is not necessary. | | |
| <i>It shall provide and indentified the evidences proposed (if applicable)</i> | Oficio Nro MAE-D_2012-0658 | | |
| DOE Assessment #1 <i>The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added</i> | During the validation process the CME has voluntarily decided to change the PoA boundary. The PoA-DD and CPA-DD submitted for global stakeholder consultation included Colombia as a host country for this PoA, but in the final version of the PoA-DD and CPA-DD, Colombia has not been included as a host country for this PoA. Due to this change, the title of the PoA has been also changed from "Promotion of POME and EFB Co-Composting in Colombia and Ecuador" included in the first version of the PoA-DD to "Promotion of POME and EFB Co-Composting" included in the latest version of the PoA-DD. Therefore the Letter of Approval from Colombia is not necessary anymore. | | |
| PP RESPONSE #2 | <i>This section shall be filled by the PP.</i> | | |
| <i>Corrective action</i> | | | |
| <i>Evidences proposed</i> | | | |
| DOE Assessment #2 | | | |
| Conclusion <i>Tick the appropriate checkbox</i> | CAR CLOSED <input checked="" type="checkbox"/> | To be checked during the first periodic verification <input type="checkbox"/> | |

VALIDATION REPORT

"Promotion of POME and EFB Co-Composting"

| | | | |
|--|--|---|------------------------------|
| TITLE | Promotion of POME and EFB Co-Composting | | |
| FINDING | CAR 2 | | |
| Classification | CAR <input checked="" type="checkbox"/> | CL <input type="checkbox"/> | FAR <input type="checkbox"/> |
| Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i> | The category of the programme shall be correctly identified and indicated in the PoA-DD. The PoA-DD shall confirm that belongs to one of the project categories defined for small scale CDM project activities. | | |
| PP RESPONSE #1 | <i>This section shall be filled by the PP.</i> | | |
| <i>It shall address the corrective action taken in details</i> | A.4.2 of PoA-DD is updated to include the category of the PoA and to confirm that the PoA-DD belongs to an approved SSC project category. | | |
| <i>It shall provide and indentified the evidences proposed (if applicable)</i> | | | |
| DOE Assessment #1 <i>The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added</i> | Sectoral scope the project activity belongs to is not stated in the PoA-DD. | | |
| PP RESPONSE #2 | <i>This section shall be filled by the PP.</i> | | |
| <i>Corrective action</i> | Sectoral scope stated in A.4.2 of PoA-DD | | |
| <i>Evidences proposed</i> | | | |
| DOE Assessment #2 | The latest version of the PoA-DD includes a reference of the scope the programme of activities belongs to (scope 13) | | |
| Conclusion <i>Tick the appropriate checkbox</i> | CAR CLOSED <input checked="" type="checkbox"/> | To be checked during the first periodic verification <input type="checkbox"/> | |

VALIDATION REPORT

"Promotion of POME and EFB Co-Composting"

| | | | |
|--|---|---|------------------------------|
| TITLE | Promotion of POME and EFB Co-Composting | | |
| FINDING | CAR 3 | | |
| Classification | CAR <input checked="" type="checkbox"/> | CL <input type="checkbox"/> | FAR <input type="checkbox"/> |
| Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i> | Provisions regarding the updating of the CPAs in case of held or withdraw of the methodology AMS.III.F shall be taken into account. | | |
| PP RESPONSE #1 <i>This section shall be filled by the PP.</i> | | | |
| <i>It shall address the corrective action taken in details</i> | A.4.4.1 is updated in PoA-DDv2 to include provisions for updating CPAs in case methodology AMS III.F is put on hold or withdrawn | | |
| <i>It shall provide and indentified the evidences proposed (if applicable)</i> | N/A | | |
| DOE Assessment #1 <i>The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added</i> | The PoA - DD has been updated and its last version includes provisions in case of held or withdraw of the applied methodology. In that case, applicable CDM procedures would be followed. | | |
| PP RESPONSE #2 <i>This section shall be filled by the PP.</i> | | | |
| <i>Corrective action</i> | | | |
| <i>Evidences proposed</i> | | | |
| DOE Assessment #2 | | | |
| Conclusion <i>Tick the appropriate checkbox</i> | CAR CLOSED <input checked="" type="checkbox"/> | To be checked during the first periodic verification <input type="checkbox"/> | |

VALIDATION REPORT

"Promotion of POME and EFB Co-Composting"

| TITLE | Promotion of POME and EFB Co-Composting | | |
|--|--|---|------------------------------|
| FINDING | CAR 4 | | |
| Classification | CAR <input checked="" type="checkbox"/> | CL <input type="checkbox"/> | FAR <input type="checkbox"/> |
| Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i> | Every selection of options provided in the approved baseline and monitoring methodology and applied shall be detailed and correctly justified in the PoA –DD. | | |
| PP RESPONSE #1 <i>This section shall be filled by the PP.</i> | | | |
| <i>It shall address the corrective action taken in details</i> | E.6.1 and E.6.2 are updated in PoA-DDv2 to clearly state and justify every selection of options from the approved methodology. | | |
| <i>It shall provide and indentified the evidences proposed (if applicable)</i> | N/A | | |
| DOE Assessment #1 <i>The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added</i> | The latest version of the PoA-DD explains and justifies clearly every selection of options taken according to the applied methodology. | | |
| PP RESPONSE #2 <i>This section shall be filled by the PP.</i> | | | |
| <i>Corrective action</i> | | | |
| <i>Evidences proposed</i> | | | |
| DOE Assessment #2 | | | |
| Conclusion <i>Tick the appropriate checkbox</i> | CAR CLOSED <input checked="" type="checkbox"/> | To be checked during the first periodic verification <input type="checkbox"/> | |

VALIDATION REPORT

"Promotion of POME and EFB Co-Composting"

| TITLE | Promotion of POME and EFB Co-Composting | | |
|--|--|---|------------------------------|
| FINDING | CAR 5 | | |
| Classification | CAR <input checked="" type="checkbox"/> | CL <input type="checkbox"/> | FAR <input type="checkbox"/> |
| Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i> | Information included in Annex 3 is not consistent with data presented in other sections of the PoA-DD | | |
| PP RESPONSE #1 <i>This section shall be filled by the PP.</i> | <i>This section shall be filled by the PP.</i> | | |
| <i>It shall address the corrective action taken in details</i> | References to Annex 3 have been modified and made consistent in sections E.6.2, E.6.3 and E.7.1 of PoA-DDv2 | | |
| <i>It shall provide and indentified the evidences proposed (if applicable)</i> | N/A | | |
| DOE Assessment #1 <i>The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added</i> | The PoA-DD has been updated and its last version does not include inconsistencies between Annex 3 and other section of the document. | | |
| PP RESPONSE #2 <i>This section shall be filled by the PP.</i> | <i>This section shall be filled by the PP.</i> | | |
| <i>Corrective action</i> | | | |
| <i>Evidences proposed</i> | | | |
| DOE Assessment #2 | | | |
| Conclusion <i>Tick the appropriate checkbox</i> | CAR CLOSED <input checked="" type="checkbox"/> | To be checked during the first periodic verification <input type="checkbox"/> | |

VALIDATION REPORT

"Promotion of POME and EFB Co-Composting"

| TITLE | Promotion of POME and EFB Co-Composting | | |
|--|--|---|------------------------------|
| FINDING | CAR 6 | | |
| Classification | CAR <input checked="" type="checkbox"/> | CL <input type="checkbox"/> | FAR <input type="checkbox"/> |
| Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i> | Project emissions are not correctly calculated according to the applied methodology. The PoA- DD shall be updated including the correct formulae for PE calculation. | | |
| PP RESPONSE #1 | <i>This section shall be filled by the PP.</i> | | |
| <i>It shall address the corrective action taken in details</i> | E.6.2 is updated in PoA-DD to clearly justify the compliance with the approved methodology to calculate project emissions. PoA-DDv2 now correctly uses the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion" v2 | | |
| <i>It shall provide and indentified the evidences proposed (if applicable)</i> | N/A | | |
| DOE Assessment #1 <i>The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added</i> | The explanation on how the PEs are calculated, is not complete according to the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion". Parameter COEF _{i,y} shall be deeply explained. Parameters NCV _{i,y} and EF _{CO2,i,y} have not been stated in the PoA-DD. | | |
| PP RESPONSE #2 | <i>This section shall be filled by the PP.</i> | | |
| <i>Corrective action</i> | E.6.1, E.6.2, E.6.3, and E.7.1 are updated to fully reflect the use of the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion" v2 and to explain and justify the options that are selected. | | |
| <i>Evidences proposed</i> | | | |
| DOE Assessment #2 | The formulae used to calculate Project Emissions haven been correctly quoted in the latest version of the PoA-DD. Every option selected in the calculation has been correctly justified according to the applied methodology. | | |
| Conclusion <i>Tick the appropriate checkbox</i> | CAR CLOSED <input checked="" type="checkbox"/> | To be checked during the first periodic verification <input type="checkbox"/> | |

VALIDATION REPORT

"Promotion of POME and EFB Co-Composting"

| TITLE | Promotion of POME and EFB Co-Composting | | |
|--|---|---|------------------------------|
| FINDING | CAR 7 | | |
| Classification | CAR <input checked="" type="checkbox"/> | CL <input type="checkbox"/> | FAR <input type="checkbox"/> |
| Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i> | <p>No justification is provided in the PoA –DD about the 10 years investment assessment period. The PDD shall be updated including a justification about the selected assessment period.</p> <p>Moreover, further information was requested from PP regarding the appropriateness of the option chosen for the investment analysis.</p> | | |
| PP RESPONSE #1 <i>This section shall be filled by the PP.</i> | | | |
| <i>It shall address the corrective action taken in details</i> | E.5.2 is updated in PoA-DDv2 to justify the selection of 10 years as the period of assessment for the investment analysis. | | |
| <i>It shall provide and indentified the evidences proposed (if applicable)</i> | N/A | | |
| DOE Assessment #1 <i>The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added</i> | The PoA-DD has been updated and a justification of the 10 years investment assessment period is included. | | |
| PP RESPONSE #2 <i>This section shall be filled by the PP.</i> | | | |
| <i>Corrective action</i> | | | |
| <i>Evidences proposed</i> | | | |
| DOE Assessment #2 | | | |
| Conclusion <i>Tick the appropriate checkbox</i> | CAR CLOSED <input checked="" type="checkbox"/> | To be checked during the first periodic verification <input type="checkbox"/> | |

VALIDATION REPORT

"Promotion of POME and EFB Co-Composting"

| TITLE | Promotion of POME and EFB Co-Composting | | |
|--|---|---|------------------------------|
| FINDING | CAR 8 | | |
| Classification | CAR <input checked="" type="checkbox"/> | CL <input type="checkbox"/> | FAR <input type="checkbox"/> |
| Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i> | The value included in the PoA-DD for the depreciation period for Mobile Equipment in Colombia is not correct according to the evidence Decree 3019 of 1989. The PoA-DD shall be updated including the correct value. | | |
| PP RESPONSE #1 <i>This section shall be filled by the PP.</i> | | | |
| <i>It shall address the corrective action taken in details</i> | Colombia is discarded as host country for the proposed POA. Then, it has been removed from DDs. | | |
| <i>It shall provide and indentified the evidences proposed (if applicable)</i> | | | |
| DOE Assessment #1 <i>The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added</i> | CAR 8 is closed because the final version of the POA-DD, and the Generic CPA-DD do not consider Colombia as host country. | | |
| PP RESPONSE #2 <i>This section shall be filled by the PP.</i> | | | |
| <i>Corrective action</i> | | | |
| <i>Evidences proposed</i> | | | |
| DOE Assessment #2 | | | |
| Conclusion <i>Tick the appropriate checkbox</i> | CAR CLOSED <input checked="" type="checkbox"/> | To be checked during the first periodic verification <input type="checkbox"/> | |

VALIDATION REPORT

"Promotion of POME and EFB Co-Composting"

| | | | |
|--|---|---|------------------------------|
| TITLE | Promotion of POME and EFB Co-Composting | | |
| FINDING | CL 1 | | |
| Classification | CAR <input type="checkbox"/> | CL <input checked="" type="checkbox"/> | FAR <input type="checkbox"/> |
| Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i> | A schedule for the implementation of the PoA is required. | | |
| PP RESPONSE #1 <i>This section shall be filled by the PP.</i> | | | |
| <i>It shall address the corrective action taken in details</i> | An overall schedule is provided. The specific schedules for the San Patricio CPA (registration and construction) are included in the evidences for CPA-DD CLs1 & 2. | | |
| <i>It shall provide and indentified the evidences proposed (if applicable)</i> | PoA implementation schedule | | |
| DOE Assessment #1 <i>The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added</i> | A schedule has been provided and there are not risks for delays. | | |
| PP RESPONSE #2 <i>This section shall be filled by the PP.</i> | | | |
| <i>Corrective action</i> | | | |
| <i>Evidences proposed</i> | | | |
| DOE Assessment #2 | | | |
| Conclusion <i>Tick the appropriate checkbox</i> | CL CLOSED <input checked="" type="checkbox"/> | To be checked during the first periodic verification <input type="checkbox"/> | |

VALIDATION REPORT

"Promotion of POME and EFB Co-Composting"

| | | | |
|--|--|---|------------------------------|
| TITLE | Promotion of POME and EFB Co-Composting | | |
| FINDING | CL 2 | | |
| Classification | CAR <input type="checkbox"/> | CL <input checked="" type="checkbox"/> | FAR <input type="checkbox"/> |
| Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i> | It shall be clarified if the CME has developed and implemented a Management System. Evidence of it shall be provided to the DOE team. | | |
| PP RESPONSE #1 | <i>This section shall be filled by the PP.</i> | | |
| <i>It shall address the corrective action taken in details</i> | A.4.4.1 is updated in PoA-DDv2 to reflect the most recent version of GPMP's management system. The entire management system (version 01/03/2012) is provided to the DOE team. | | |
| <i>It shall provide and indentified the evidences proposed (if applicable)</i> | Evidence of system development: GPMP's management system (manual plus 11 annexes) Evidence of system implementation: Technical Review protocol applied to the San Patricio CPA Personnel qualifications for inclusion of the San Patricio CPA | | |
| DOE Assessment #1 <i>The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added</i> | The CME has developed and implemented a Management System according to the "Standard for Demonstration of Additionality, Development of Eligibility Criteria and application of Multiple Methodologies for Programme of Activities". The Management System includes several procedures, tools and guidelines. Evidence that the Management System is used has been provided. | | |
| Conclusion <i>Tick the appropriate checkbox</i> | CL CLOSED <input checked="" type="checkbox"/> | To be checked during the first periodic verification <input type="checkbox"/> | |

VALIDATION REPORT

"Promotion of POME and EFB Co-Composting"

8 REFERENCES

| Ref | Document Name | Author/Competent Authority |
|-----|--|---|
| 1 | PoA-DD Promotion of POME and EFB Co-Composting in Colombia and Ecuador version 1 | Project Proponent |
| 2 | PoA-DD Promotion of POME and EFB Co-Composting version 2 | Project Proponent |
| 3 | CPA San Patricio POME and EFB Co-Composting Project (CPA Number 001) | Project Proponent |
| 4 | CDM SSC-generic-CPA-DD | Project Proponent |
| 5 | Approved Methodology: AMS III.F version 10.0. | CDM – Executive Board |
| 6 | Approved Methodology: AMS III.H version 16. | CDM – Executive Board |
| 7 | Tool to calculate project, baseline and/or leakage from electricity consumption. Version 01 | CDM – Executive Board |
| 8 | Tool to calculate project or leakage CO2 emissions from fossil fuel combustion. Version 02 | CDM – Executive Board |
| 9 | Guidelines on the demonstration of Additionality of Small-Scale Project Activities, version 09 | CDM – Executive Board |
| 10 | Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities. Version 02.1 | CDM – Executive Board |
| 11 | Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities. Version 03 | CDM – Executive Board |
| 12 | Guidelines on the Assessment of Investment Analysis, version 05 | CDM – Executive Board |
| 13 | CDM Validation and Verification Manual version 01.2 | CDM – Executive Board |
| 14 | Letter of Approval from the DNA of Ecuador | MAE |
| 16 | Specific Instruction for the Processing and Conducting of Validation, Registration, Verification and Certification of Kyoto Protocol CDM Project Activities (IE-DTC-039) | AENOR |
| 17 | General Guidelines to SSC CDM Methodologies version 17 | CDM – Executive Board |
| 18 | PoA Management System | Gestora de Programa Marco de Palma S.L. |
| 19 | Eligibility criteria cross-check | Gestora de Programa Marco de Palma S.L. |

VALIDATION REPORT

"Promotion of POME and EFB Co-Composting"

| Ref | Document Name | Author/Competent Authority |
|-----|---|---|
| 20 | PoA implementation schedule | Gestora de Programa Marco de Palma S.L. |
| 21 | Database of published EIAs, Ecuadorian Palm Oil Sector. | Project Proponent/UNFCCC |
| 22 | M. Wambeck, "Handbook for Palm Oil Mills" | Wambeck |
| 23 | Report by ANCUPA (National Association of Ecuador of Palm Cultivators, 2005 Census | ANCUPA |
| 25 | http://www.costwater.com | Web site cost water |
| 26 | Palmeras POME Co-Composting Project | UNFCCC |
| 27 | Juan Diez Waste Water Treatment Plant | |
| 28 | Decree 1051, 2008 for Ecuador | Government of Ecuador |
| 29 | Production Code of 2010 and Workers' Code of 2005 | Government of Ecuador |
| 30 | World Bank, 2010 Report 46551 entitled "Ecuador: Diversification and Sustainable in an Oil-Dependent Country | World Bank |
| 31 | Procedures for Registration of a Programme of Activities as a single CDM project activity and issuance of certified emission reductions for a Programme of Activities. Version 04.1 | UNFCCC |

ANNEX 1: CDM VALIDATION PROTOCOL

VALIDATION PROTOCOL
PROGRAMME OF ACTIVITIES:

"PROMOTION OF POME AND EFB CO-COMPOSTING"

COORDINATING ENTITY/PROJECT PARTICIPANT:
Gestora de Programa Marco Palma, S.L.

| | |
|--|------------------|
| Validation Type | |
| <input checked="" type="checkbox"/> Validation of a Programme of Activities | |
| Validation Team: Alfonso Medrano Gutierrez (Chief Validator) José Luis Fuentes Pérez (Validator) | |
| Version of this Validation Protocol: 02 | Date: 27/12/2012 |

AENOR Reference: 2011/099/CDM/73

VALIDATION REPORT

"Promotion of POME and EFB Co-Composting"

| CHECKLIST TOPIC / QUESTION | MoU. | COMMENTS | Draft Conclusion | Final Conclusion |
|---|---------|---|------------------|------------------|
| A. GENERAL DESCRIPTION OF PROGRAMME OF ACTIVITIES | | | | |
| A.1. Approval | | | | |
| A.1.1 Have all the parties involved in the Programme of Activities provided a written Letter of Approval of the Programme of Activities? | DR I | <p>CAR 1 – The Letters of Approval from Ecuador and Colombia shall be provided to the DOE team.</p> <p>During the validation process the CME has voluntarily decided to change the PoA boundary. The PoA-DD, the CPA of San Patricio and the generic CPA-DD, submitted for global stakeholder consultation, included Colombia as a host country for this PoA, but in the final version of the PoA-DD and CPA-DD, Colombia has not been included as a host country for this PoA. Therefore the Letter of Approval from Colombia is not necessary anymore.</p> <p>Due to this change, the title of the PoA has been also changed from "Promotion of POME and EFB Co-Composting in Colombia and Ecuador" included in the first version of the PoA-DD to "Promotion of POME and EFB Co-Composting" included in the latest version of the PoA-DD.</p> <p>CAR1 is closed.</p> | CAR 1 | OK |
| A.1.2 Do the Letters of Approval confirm that: <ul style="list-style-type: none"> The Party is a Party to the Kyoto Protocol The participation is voluntary The CDM Programme of Activities contribute to the sustainable development (host Party) The title of the Programme of Activities is precise and coincides with the title included in the POA-DD? | DR I | <p>The Letter of Approval from Ecuador confirms that:</p> <ul style="list-style-type: none"> Ecuador is a Party to the Kyoto Protocol The participation is voluntary The CDM Programme of Activities contributes to the sustainable development (host Party) The title of the Programme of Activities is precise and coincides with the title included in the POA-DD | CAR 1 | OK |

VALIDATION REPORT

"Promotion of POME and EFB Co-Composting"

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|---|---------|---|--------------|----|
| A.1.3 Has the Letter of Approval be obtained from the project participants or directly from the DNA? In case that it has been obtained from the Project participant, how has been assessed its authenticity? | DR I | The Letter of Approval has been obtained from the project participant and its authenticity has been assessed through a conversation with the Coordinator of the DNA of Ecuador (Alexandra Buri). | CAR 1 | OK |
| A.1.4. Does the coordinating entity of the PoA identify measures to ensure that all CPAs under its PoA are neither registered as an individual CDM project activity nor included in another registered PoA and that the CPA is subscribed to the PoA? (Double accounting methodology) | DR I | Yes, the coordinating entity of the PoA identifies in the Management system (procedure 4.1) measures to ensure that all CPAs under its PoA are neither registered as an individual CDM project activity nor included in another registered PoA and that the CPA is subscribed to the PoA. | OK | OK |
| A.2. Project participants | | | | |
| A.2.1. Is the form required for the indication of project participants correctly applied in the POA-DD? | DR | Yes, the form is correctly included in the POA-DD. | OK | OK |
| A.2.2. Is the participation of all project participants approved by a Party to the Kyoto Protocol? | DR | Yes, the participation of all project participants is approved by a Party to the Kyoto Protocol. | CAR 1 | OK |
| A.2.3. Is all information on participants / Parties provided in consistency with details provided by further chapters of the POA-DD (in particular annex 1)? | DR | Yes. The information is consistent. | OK | OK |
| A.2.4. Have parties participating in the CDM POA designated a national authority and a coordinating/managing entity for the POA? | DR I | The Coordinating Entity is designated and transparent detailed in the PoA-DD. The LoA from Ecuador authorizes "Gestora de Programa Marco de Palma" as the Coordinating Entity for this PoA. | CAR 1 | OK |
| A.2.5. Is the authority and responsibility of the coordinating/management entity clearly described? | I | Yes. The coordinating entity is Gestora de Programa Marco Palma, S.L. The role and main activities of the Coordinating Entity are clearly described and it was confirmed during the on site visit. | OK | OK |

VALIDATION REPORT

“Promotion of POME and EFB Co-Composting”

| | | | | |
|---|---------|---|--------------|----|
| A.2.6. Is the Coordinating Agency a project participant authorized by all participating host countries DNAs involved and identified in the modalities of communication as the entity which communicates with the Board? | DR I | The Coordinating Entity is designated and transparent detailed in the PoA-DD. The LoA from Ecuador authorizes “Gestora de Programa Marco de Palma” as the Coordinating Entity for this PoA. | CAR 1 | OK |
| A.3. Programme Design Document | | | | |
| A.3.1. Does the used programme title clearly enable to identify the unique CDM Programme of Activities? Is it consistent in all section of the POA-DD and in all documents? | DR I | <p>Yes, the title is “<i>Promotion of POME and EFB Co-Composting in Colombia and Ecuador</i>”. The title is consistent in the entire document.</p> <p>During the validation process the CME has voluntarily decided to change the PoA boundary. The PoA-DD, the CPA of San Patricio and the generic CPA-DD, submitted for global stakeholder consultation, included Colombia as a host country for this PoA, but in the final version of the PoA-DD and CPA-DD, Colombia has not been included as a host country for this PoA. Therefore the Letter of Approval from Colombia is not necessary anymore.</p> <p>Due to this change, the title of the PoA has been also changed from “Promotion of POME and EFB Co-Composting in Colombia and Ecuador” included in the first version of the PoA-DD to “Promotion of POME and EFB Co-Composting” included in the latest version of the PoA-DD.</p> | OK | OK |
| A.3.2. Is there any indication concerning the version number and the date of the version? | D | Yes, there are indications concerning the version number and the date of the version | OK | OK |
| A.3.3. Is this consistent with the time line of the project’s history? | DR | Yes, documents and dates are consistent. | OK | OK |
| A.3.4. Is the POA-DD prepared in accordance with the latest template and guidance from the CDM Executive Board? | DR | Yes, the format of the CDM-PoA-DD used is exactly in accordance with the last format published in the UNFCCC web page (CDM SSC-PoA-DD version 01): | OK | OK |

VALIDATION REPORT

“Promotion of POME and EFB Co-Composting”

| | | | | |
|---|---------|---|----|----|
| A.3.5. Has the POA-DD been published for Global Stakeholder Consultation (GSC) in the UNFCCC webpage? | DR | Yes. The PoA-DD was public for stakeholder consultation on 2011/12/20 | OK | OK |
| A.3.6. Have there been any comments during the GSC process? | DR | During the GSC process no comments were received. | OK | OK |
| A.3.7. Have them correctly addressed by the validation team? | DR | Not applicable since no comments were received. | OK | OK |
| A.4. Description of the Programme of Activities | | | | |
| The POA-DD (section A.2) shall contain a clear description of the Programme of Activities that provides the reader with a clear understanding of the precise nature of the Programme of Activities. | | | | |
| A.4.1. Is the description delivering a transparent overview of the Programme of Activities? | DR I | The description of the Programme included in the PoA-DD is transparent and accurate. | OK | OK |
| A.4.2. What proofs are available demonstrating that the programme description is in compliance with the actual situation or planning? | DR I | The description was assessed during the on-site visit and is deemed to be in compliance with the actual situation or planning. Evidence provided by the PP (<i>“Prospects for world supply & demand of vegetable oils global challenges and implications for the oil palm agro-industry”, September 2009</i> and in <i>“Biofuels and Commodity Markets – Palm Oil Focus”</i> and M. Wambeck, <i>“Handbook for Palm Oil Mills”</i> , October 2006) were also checked by the validation team | OK | OK |
| A.4.3. Is the information provided by these proofs consistent with the information provided by the POA-DD? | DR | Yes. The information is consistent. | OK | OK |
| A.4.4. Has the validation team conducted a physical site inspection to confirm the description of the POA-DD? If not, justify. | I | Yes, an onsite visit was conducted on 2012/01/24-26 | OK | OK |
| A.5. Technical description of the Programme of Activities | | | | |
| The POA-DD (section A.4) shall contain a clear description of the Programme of Activities that provides the reader a clear understanding of the technical aspects of its | | | | |

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| implementation. | | | | |
| <i>A.5.1. Location of the Programme of Activities</i> | | | | |
| A.5.1.1. Is the definition of the boundary for the POA established in terms of a geographical area within which all CPAs will be implemented? | DR I | Yes, the Programme of Activities will be implemented within the geographical limits of Ecuador. | OK | OK |
| A.5.1.2 Do the requirement that all applicable national and/or sectoral policies and regulations of the host country within the boundaries chosen taken into account? | DR I | Yes. The boundary of the Programme has been well established, and all sectoral policies and regulations of the host country have been taken into account. | OK | OK |
| <i>A.5.2. Category of the Programme of Activities</i> | | | | |
| A.5.2.1. To which category(ies) does the Programme of Activities belonging to? Is this category correctly identified and indicated? | DR I | <p>The proposed SSC-PoA falls in the type III scope 13 (Waste handling and Disposal) category.</p> <p>CAR2 The category of the programme shall be correctly identified and indicated in the PoA-DD. The PoA-DD shall confirm that belongs to one of the project categories defined for small scale CDM project activities.</p> <p>The latest version of the PoA-DD includes a reference of the scope the programme of activities belongs to (scope 13)</p> <p>CAR2 is closed.</p> | CAR2 | OK |
| A.5.2.2. Does the Programme qualify as a small scale CDM Programme of Activities as defined in paragraph 6 (c) of decision 3/CMP.1 on the modalities and procedures for the CDM? | DR | Yes, the project is qualified as SSC CDM Programme Activity as the emission reductions every year are not beyond the limits of 60 ktCO ₂ e/y over the entire crediting period. | OK | OK |
| A.5.2.3. Does proposed POA confirm to one of the project categories defined for small scale CDM project activities? | DR | Yes, the proposed POA confirms to one of the project categories defined for small scale CDM project activities | OK | OK |

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| A.5.2.3. In the case of a small scale Programme of Activities, is it justified that the CPAs are not a debundled component of a larger CPAs? | DR I | Yes, the SSC-CPAs included in the POA will not be a de-bundled component from another CDM Programme Activity (CPA) or large scale CDM project activity. Eligibility criteria No. 4 provides a strict restriction that will ensure that CPAs to be included are not a de-bundled component of another CPA or CDM project activity. This criteria is enforced by the Managing Entity. | OK | OK |
| <i>A.5.3. Technology to be employed by the Programme of Activities</i> | | | | |
| A.5.3.1. Does the description of the technology to be applied provide sufficient and transparent input/information to evaluate its impact on the greenhouse gas balance? And, is the explanation how the programme will reduce greenhouse gas emission transparent and suitable? | DR I | Yes, the description of the technology to be applied provides sufficient and transparent input/information to evaluate its impact on the greenhouse gas balance. The explanation on how the PoA will reduce greenhouse gas emission is transparent and suitable in section A.2 of the PoA-DD. | OK | OK |
| A.5.3.2. Does the programme require extensive initial training and maintenance efforts in order to be carried out as scheduled during the life POA period? If so, does the POA make provisions for meeting training and maintenance needs? | DR I | Yes, provisions for training and capacity development of the personnel and maintenance needs are included in the Management Plan of the PoA. | OK | OK |
| A.5.3.3. Is a schedule available for the implementation of the POA and are there any risks for delays? | DR I | No schedule has been provided. CL 1 A schedule for the implementation of the PoA is required. A schedule has been provided and there are not risks for delays. CL1 is closed. | CL1 | OK |
| <i>A.5.4 Eligibility Criteria</i> | | | | |
| A.5.4.1. Are the eligibility criteria for inclusion of a CPA described in the POA sufficiently objective and comprehensive? Are eligibility criteria verifiable? | DR | Yes, the eligibility criteria for inclusion of a CPA in the PoA are clearly defined in the PoA –DD and they are verifiable. | OK | OK |

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| A.5.4.2. Do the eligibility criteria defined by the CME comply with the requirements specified in the "Standard for Demonstration of Additionality, Development of Eligibility Criteria and application of Multiple Methodologies for Programme of Activities"? | DR | Yes, the eligibility criteria are in accordance with the "Standard for Demonstration of Additionality, Development of Eligibility Criteria and application of Multiple Methodologies for Programme of Activities". Evidence "Eligibility Criteria.xls" has been provided to the DOE team. | OK | OK |
| A.5.4.3 Have the CME developed and implemented a Management System according to the "Standard for Demonstration of Additionality, Development of Eligibility Criteria and application of Multiple Methodologies for Programme of Activities"? | DR | <p>CL2: It shall be clarified if the CME has developed and implemented a Management System. Evidence of it shall be provided to the DOE team.</p> <p>The CME has developed and implemented a Management System according to the "Standard for Demonstration of Additionality, Development of Eligibility Criteria and application of Multiple Methodologies for Programme of Activities. The Management System includes several procedures, tools and guidelines. Evidence that the Management System is used has been provided.</p> <p>CL2 is closed.</p> | CL2 | OK |
| <i>A.5.5 Public funding of the Programme of Activities</i> | | | | |
| A.5.5.1. In case of public funding from Annex I Parties is it confirmed that such funding does not result in a diversion of official development assistance? | DR I | No public financing will be used in this PoA and related CPAs. | OK | OK |
| A.5.5.2. Is all information provided consistent with the details given in remaining chapters of the POA-DD (in particular annex 2) | DR I | Yes, the information provided is consistent. | OK | OK |
| B. BASELINE AND MONITORING METHODOLOGY | | | | |
| B.1. Title and reference of the approved baseline and monitoring methodology | | | | |
| B.1.1. Are reference number, version number, and title of the approved baseline and monitoring methodology clearly | DR | Yes, the reference number, version number and title of the approved | OK | OK |

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| indicated? | | methodology is clearly indicated in the PDD. The methodology applied is: AMS III.F: Avoidance of methane emissions through composting", version 10.0. For the baseline wastewater emissions, this methodology refers to AMS III.H: Methane recovery in wastewater treatment", version 16.0. | | |
| B.1.2. Is the applied version the most recent one and / or is this version still applicable? | DR | Yes. The selected small scale baseline methodology is the most recent one. | OK | OK |
| B.1.3. Does the POA-DD refer to the corresponding tools with their latest approved versions? | DR | Yes, the "Tool to calculate project, baseline and/or leakage from electricity consumption", version 01 and the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion" version 2 have been used in accordance with provisions stated in the POA and in the applied methodology. | OK | OK |
| B.1.4. Is the baseline methodology applicable to Programmes of Activities? | DR I | Yes, the methodology AMS.III F version 10.0 is applicable to Programme of Activities under this category. | OK | OK |
| B.2. Applicability of the selected methodology to the Programme of Activities | | | | |
| B.2.1. Are the chosen tools considered applicable in accordance with the design of the POA and the provisions of the applied methodology? | DR | Yes, the chosen tools are considered applicable in accordance with the design of the POA and the provisions of the applied methodology. | OK | OK |
| B.2.2. Is the choice of the methodology correctly justified by the POA-DD and is the POA in conformance with all applicability criteria of the applied methodology? | DR | Yes, the methodology is transparently justified in the POA-DD and each one of the applicability criteria is detailed in the document. | OK | OK |
| B.2.3. Are provisions regarding the updating the CPAs in case of held or withdraw the methodology be taken into account in | DR | CAR3 Provisions regarding the updating of the CPAs in case of held or | CAR3 | OK |

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| the POA-DD? | | withdraw of the methodology AMS.III.F shall be taken into account. The PDD has been updated and its last version includes provisions in case of held or withdraw of the applied methodology. In that case, applicable CDM procedures would be followed. CAR3 is closed. | | | | | | | | | | |
|---|--------|---|-------------------------|--------|------------------------------------|-----|--------------------|-----|----------------------|-----|----|----|
| Fill in the required amount of sub checklists for applicability criteria as given by the methodology applied and comment at least every line answered with “No” | | | | | | | | | | | | |
| B.2.4. Criterion 1: This methodology comprises measures to avoid the emissions of methane to the atmosphere from biomass or other organic matter that would have otherwise been left to decay anaerobically in a solid waste disposal site (SWDS), or in an animal waste management system (AWMS), or in a wastewater treatment system (WWTS). In the project activity, controlled aerobic treatment by composting of biomass is introduced. | DR | <table><tr><th>Applicability checklist</th><th>Yes/No</th></tr><tr><td>Criterion discussed in the POA-DD?</td><td>Yes</td></tr><tr><td>Evidence provided?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> | Applicability checklist | Yes/No | Criterion discussed in the POA-DD? | Yes | Evidence provided? | Yes | Compliance verified? | Yes | OK | OK |
| Applicability checklist | Yes/No | | | | | | | | | | | |
| Criterion discussed in the POA-DD? | Yes | | | | | | | | | | | |
| Evidence provided? | Yes | | | | | | | | | | | |
| Compliance verified? | Yes | | | | | | | | | | | |
| B.2.5. Criterion 2: The project activity does not recover or combust landfill gas from the disposal site (unlike AMS-III.G “Landfill methane recovery”), and does not undertake controlled combustion of the waste that is not treated biologically in a first step (unlike AMS-III.E “Avoidance of methane production from decay of biomass through controlled combustion, gasification or mechanical/thermal treatment”). Project activities that recover biogas from wastewater treatment shall use methodology AMS-III.H “Methane recovery in wastewater treatment”. Project activities involving co-digestion of organic matters shall apply methodology AMS-III.AO “Methane recovery through controlled anaerobic digestion”. | DR | <table><tr><th>Applicability checklist</th><th>Yes/No</th></tr><tr><td>Criterion discussed in the POA-DD?</td><td>Yes</td></tr><tr><td>Evidence provided?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> | Applicability checklist | Yes/No | Criterion discussed in the POA-DD? | Yes | Evidence provided? | Yes | Compliance verified? | Yes | OK | OK |
| Applicability checklist | Yes/No | | | | | | | | | | | |
| Criterion discussed in the POA-DD? | Yes | | | | | | | | | | | |
| Evidence provided? | Yes | | | | | | | | | | | |
| Compliance verified? | Yes | | | | | | | | | | | |

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| B.2.6. Criterion 3: Measures are limited to those that result in emission reductions of less than or equal to 60 kt CO ₂ equivalent annually. | DR | | Applicability checklist | Yes/No | | OK | OK |
| | | | Criterion discussed in the POA-DD? | Yes | | | |
| | | | Evidence provided? | Yes | | | |
| | | | Compliance verified? | Yes | | | |
| B.2.7. Criterion 4: This methodology is applicable to the composting of the organic fraction of municipal solid waste and biomass waste from agricultural or agro-industrial activities including manure. | DR | | Applicability checklist | Yes/No | | OK | OK |
| | | | Criterion discussed in the POA-DD? | Yes | | | |
| | | | Evidence provided? | Yes | | | |
| | | | Compliance verified? | Yes | | | |
| B.2.8. Criterion 5: This methodology includes construction and expansion of treatment facilities as well as activities that increase capacity utilization at an existing facility. For project activities that increase capacity utilization at existing facilities, project participant(s) shall demonstrate that special efforts are made to increase the capacity utilization, that the existing facility meets all applicable laws and regulations and that the existing facility is not included in a separate CDM project activity. The special efforts should be identified and described. | DR | | Applicability checklist | Yes/No | | OK | OK |
| | | | Criterion discussed in the POA-DD? | Yes | | | |
| | | | Evidence provided? | Yes | | | |
| | | | Compliance verified? | Yes | | | |
| B.2.9. Criterion 6: This methodology is also applicable for co-composting wastewater and solid biomass waste, where wastewater would otherwise have been treated in an anaerobic wastewater treatment system without biogas recovery. The wastewater in the project scenario is used as a | DR | | Applicability checklist | Yes/No | | OK | OK |

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| source of moisture and/or nutrients to the biological treatment process e.g. composting of empty fruit bunches (EFB), a residue from palm oil production, with the addition of palm oil mill effluent (POME) which is the wastewater co-produced from palm oil production. | | <table><tr><td>Criterion discussed in the POA-DD?</td><td>Yes</td></tr><tr><td>Evidence provided?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> | Criterion discussed in the POA-DD? | Yes | Evidence provided? | Yes | Compliance verified? | Yes | | | | |
|--|--------|---|------------------------------------|--------|------------------------------------|-----|----------------------|-----|----------------------|-----|----|----|
| Criterion discussed in the POA-DD? | Yes | | | | | | | | | | | |
| Evidence provided? | Yes | | | | | | | | | | | |
| Compliance verified? | Yes | | | | | | | | | | | |
| B.2.10. Criterion 7: In case of co-composting, if it cannot be demonstrated that the organic matter would otherwise been left to decay anaerobically, baseline emissions related to such organic matter shall be accounted for as zero, whereas project emissions shall be calculated according to the procedures presented in this methodology for all cocomposted substrates. | DR | <table><tr><th>Applicability checklist</th><th>Yes/No</th></tr><tr><td>Criterion discussed in the POA-DD?</td><td>Yes</td></tr><tr><td>Evidence provided?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> | Applicability checklist | Yes/No | Criterion discussed in the POA-DD? | Yes | Evidence provided? | Yes | Compliance verified? | Yes | OK | OK |
| Applicability checklist | Yes/No | | | | | | | | | | | |
| Criterion discussed in the POA-DD? | Yes | | | | | | | | | | | |
| Evidence provided? | Yes | | | | | | | | | | | |
| Compliance verified? | Yes | | | | | | | | | | | |
| <p>B.2.11. Criterion 8: The location and characteristics of the disposal site of the biomass, animal manure and co-composting wastewater in the baseline condition shall be known, in such a way as to allow the estimation of its methane emissions, using the provisions of AMSIII. G, AMS-III.E (concerning stockpile), AMS-III.D“Methane recovery in animal manure management systems” or AMS III.H respectively.</p> <p>Project activities for composting of animal manure shall also meet the requirements under paragraphs 1, and 2 (c) of AMS-III.D. Further no bedding material is used in the animal barns or intentionally added to the manure stream in the baseline. Blending materials may be added in the project scenario to increase the efficiency of the composting process (e.g. to achieve a desirable C/N ratio or free air space value), however, only monitored quantity of solid waste or manure or wastewater diverted from the baseline treatment system is</p> | DR | <table><tr><th>Applicability checklist</th><th>Yes/No</th></tr><tr><td>Criterion discussed in the POA-DD?</td><td>Yes</td></tr><tr><td>Evidence provided?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> | Applicability checklist | Yes/No | Criterion discussed in the POA-DD? | Yes | Evidence provided? | Yes | Compliance verified? | Yes | OK | OK |
| Applicability checklist | Yes/No | | | | | | | | | | | |
| Criterion discussed in the POA-DD? | Yes | | | | | | | | | | | |
| Evidence provided? | Yes | | | | | | | | | | | |
| Compliance verified? | Yes | | | | | | | | | | | |

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| used for emission reduction calculation. The following requirement shall be checked ex ante at the beginning of each crediting period: (a) Establish that identified landfill(s)/stockpile(s) can be expected to accommodate the waste to be used for the project activity for the duration of the crediting period; or (b) Establish that it is common practice in the region to dispose off the waste in solid waste disposal site (landfill)/stockpile(s). | | | | | | | | | | | | |
|---|--------|---|-------------------------|--------|------------------------------------|-----|--------------------|-----|----------------------|-----|----|----|
| B.2.12. Criterion 9: The project participants shall clearly define the geographical boundary of the region referred in paragraph 8 (b), and document it in the CDM-PDD. In defining the geographical boundary of the region, project participants should take into account the source of the waste i.e. if waste is transported up to 50 km, the region may cover a radius of 50 km around the project activity. In addition, it should also consider the distance to which the final product after composting will be transported. In either case, the region should cover a reasonable radius around the project activity that can be justified with reference to the project circumstances but in no case it shall be more than 200 km. Once defined, the region should not be changed during the crediting period(s). | DR | <table><tr><th>Applicability checklist</th><th>Yes/No</th></tr><tr><td>Criterion discussed in the POA-DD?</td><td>Yes</td></tr><tr><td>Evidence provided?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> | Applicability checklist | Yes/No | Criterion discussed in the POA-DD? | Yes | Evidence provided? | Yes | Compliance verified? | Yes | OK | OK |
| Applicability checklist | Yes/No | | | | | | | | | | | |
| Criterion discussed in the POA-DD? | Yes | | | | | | | | | | | |
| Evidence provided? | Yes | | | | | | | | | | | |
| Compliance verified? | Yes | | | | | | | | | | | |
| B.2.13. Criterion 10: In case produced compost is handled aerobically and submitted to soil application, the proper conditions and procedures (not resulting in methane emissions) must be ensured. | DR | <table><tr><th>Applicability checklist</th><th>Yes/No</th></tr><tr><td>Criterion discussed in the POA-DD?</td><td>Yes</td></tr><tr><td>Evidence provided?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> | Applicability checklist | Yes/No | Criterion discussed in the POA-DD? | Yes | Evidence provided? | Yes | Compliance verified? | Yes | OK | OK |
| Applicability checklist | Yes/No | | | | | | | | | | | |
| Criterion discussed in the POA-DD? | Yes | | | | | | | | | | | |
| Evidence provided? | Yes | | | | | | | | | | | |
| Compliance verified? | Yes | | | | | | | | | | | |

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| B.2.14. Criterion 11: In case produced compost is treated thermally/mechanically, the provisions in AMS-III.E related to thermal/mechanical treatment shall be applied. | DR | <table><tr><th>Applicability checklist</th><th>Yes/No</th></tr><tr><td>Criterion discussed in the POA-DD?</td><td>Yes</td></tr><tr><td>Evidence provided?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> | Applicability checklist | Yes/No | Criterion discussed in the POA-DD? | Yes | Evidence provided? | Yes | Compliance verified? | Yes | OK | OK |
|---|--------|---|-------------------------|--------|------------------------------------|-----|--------------------|-----|----------------------|-----|----|----|
| Applicability checklist | Yes/No | | | | | | | | | | | |
| Criterion discussed in the POA-DD? | Yes | | | | | | | | | | | |
| Evidence provided? | Yes | | | | | | | | | | | |
| Compliance verified? | Yes | | | | | | | | | | | |
| B.2.15. Criterion 12: In case produced compost is stored under anaerobic conditions and/or delivered to a landfill, emissions from the residual organic content shall to be taken into account and calculated as per the latest version of the “Tool to determine methane emissions avoided from disposal of waste at a solid waste disposal site”. | DR | <table><tr><th>Applicability checklist</th><th>Yes/No</th></tr><tr><td>Criterion discussed in the POA-DD?</td><td>Yes</td></tr><tr><td>Evidence provided?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> | Applicability checklist | Yes/No | Criterion discussed in the POA-DD? | Yes | Evidence provided? | Yes | Compliance verified? | Yes | OK | OK |
| Applicability checklist | Yes/No | | | | | | | | | | | |
| Criterion discussed in the POA-DD? | Yes | | | | | | | | | | | |
| Evidence provided? | Yes | | | | | | | | | | | |
| Compliance verified? | Yes | | | | | | | | | | | |
| B.3. Description of the Programme Boundary | | | | | | | | | | | | |
| B.3.1 Are all the sources and gases included in the boundary of the Programme of Activities (baseline scenario, project scenario and leakage) in accordance with the applied methodology? | DR | Section E.3 of the POA-DD details the gases and sources included in the SSC-CPA boundary and they are in accordance with applied methodology. | OK | OK | | | | | | | | |
| B.3.2. Are the inclusion or exclusion of the sources of gases correctly justified? | DR | The inclusion and exclusions of gases included in Section E.3 is in accordance with the applied methodology. | OK | OK | | | | | | | | |
| B.3.3. Do the spatial and technological boundaries as verified on-site comply with the discussion provided by the POA-DD? | DR | Yes, the spatial and technological boundaries as verified on-site comply with the discussion provided by the POA-DD | OK | OK | | | | | | | | |

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| B.3.4. In case of grid connected electricity POAs, is the relevant grid correctly identified in accordance with EB guidance and the underlying methodology? | DR | N/A. This PoA is not connected to the grid. | N/A | N/A |
| B.4. Description of the baseline scenario identification | | | | |
| B.4.1. Is the baseline scenario clearly described? | DR I | <p>AMS III.F v10 defines the baseline as <i>"the situation where, in the absence of the project activity, biomass and other organic matter are left to decay within the project boundary and methane is emitted to the atmosphere"</i>.</p> <p>The eligibility criteria for this PoA contemplate composting plants for both existing palm oil mills as well as new ones (Greenfield CPAs). For existing palm oil mills, the baseline is determined by existing practice (anaerobic treatment lagoons), as per eligibility criteria number 7 according to the applied methodology. For Greenfield CPAs, the baseline scenario is identified as per the 4-step procedure specified in the General Guidelines to SSC CDM Methodologies v17.</p> <p>The baseline scenario is clearly described in the PoA-DD.</p> | OK | OK |
| B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM Programme of Activities (assessment and demonstration of additionality): | | | | |
| <p>B.5.1. Is the PoA additionality assessed according to current versions of :</p> <ul style="list-style-type: none"> • Applicable methodology • Tool used to demonstrate the Additionality • Procedures for Registration of a Programme of Activities as a Single CDM Project Activity and issuance of Certified Emission Reductions for a Programme of Activities • Standard for Demonstration of Additionality, | DR I | <p>The additionality of the POA has been demonstrated at a CPA level, a barrier analysis is carried out following Guidelines on the demonstration of Additionality of Small-Scale Project Activities, version 09 according to paragraph 9 of the "Standard for Demonstration of Additionality, Development of Eligibility Criteria and application of Multiple Methodologies for Programme of Activities".</p> <p>An investment barrier will be assessed individually for each CPA as it has been established in the Eligibility Criteria nº 10.</p> <p>An Investment analysis will be carried out for each CPA following the</p> | OK | OK |

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| Developpement of Elegibility Criteria and application of Multiple Methodologies for Programme of Activities?" | | criteria of the Guidelines on the Assessment of Investment Analysis" | | |
| <i>B.5.2. Additionality of PoA</i> | | | | |
| B.5.2.1 Has it been demonstrated that the programme is a voluntary coordinated action that would not be implemented in the absence of CDM? | DR I | Yes, in accordance with the POA-DD and checked during the on site visit, there are no mandatory laws or regulations enforcing composting of EFB or POME. | OK | OK |
| B.5.2.2. If the programme is implementing a mandatory policy/regulation, has it been demonstrated whether the policy/regulation is not being enforced? If it is enforced, has it been demonstrated that the programme will lead to a higher level of enforcement? | DR I | Not applicable since the programme is not implementing a mandatory policy as it was crosschecked during on site visit. | N/A | N/A |
| B.5.2.3. Are all assumptions stated in a transparent and conservative manner? | DR | Assumptions have been stated in a clear, transparent and conservative manner. | OK | OK |
| B.5.2.4 Is sufficient evidence provided to support the relevance of the arguments made? | DR | Yes, sufficient evidences are provided. | OK | OK |
| <i>B.5.3 Additionality of the CPA</i> | | | | |
| B.5.3.1. Is the approach described for demonstrating additionality of a CPA in accordance with the using the current versions of the procedure provided? | DR I | The additionality of the CPA is demonstrated through a barrier analysis carried out following Guidelines on the demonstration of Additionality of Small-Scale Project Activities, version 09 according to paragraph 9 of the "Standard for Demonstration of Additionality, Developpement of Elegibility Criteria and application of Multiple Methodologies for Programme of Activities". An investment barrier will be assessed individually for each CPA as it has been established in the Elegibility Criteria nº 10. | OK | OK |

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| <p>B.5.3.2. Does the PoA define the type of information which is to be provided for each CPA to ensure the adequate demonstration of additionality?</p> | <p>DR I</p> | <p>The PoA defines the information of each CPA to ensure the adequate demonstration of additionality.</p> <p>CAR7 No justification is provided in the PoA –DD about the 10 years investment assessment period. The PDD shall be updated including a justification about the selected assessment period.</p> <p>The PoA-DD has been updated and a justification of the 10 years investment assessment period is included.</p> <p>CAR7 is closed.</p> <p>CAR8: The value included in the PoA-DD for the depreciation period for Mobile Equipment in Colombia is not correct according to the evidence Decree 3019 of 1989. The PoA-DD shall be updated including the correct value.</p> <p>The PoA-DD has been updated, Colombia has been finally removed as host country, then, CAR8 is closed.</p> | <p>CAR7, CAR8</p> | <p>OK</p> |
| <p>B.5.3.3. Is the additionality of a typical CPA demonstrated?</p> | <p>DR I</p> | <p>The investment barrier will be assessed individually for each CPA. Each CPA will have two revenue streams: income from compost sold to plantations and CERs. . Therefore, according to the non-binding best practice examples, a simple cost analysis is not indicated, but rather, an investment comparison analysis should be carried out.</p> <p>An investment barrier will be assessed individually for each CPA according to the "Guidelines on the Assessment of Investment Analysis" v05.</p> <p>The two scenarios compared are:</p> <p>a) Baseline: anaerobic treatment lagoons for POME</p> <p>b) Project: Co-composting of EFB and POME without CER revenue</p> <p>The financial indicator chosen is net present value (NPV) of the net cash flow outlays for both scenarios. Additionality is demonstrated for each CPA if the NPV net cash flow outlays of the project scenario are lower</p> | <p>OK</p> | <p>OK</p> |

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| | | than the NPV outlays of the baseline. | | |
| B.5.3.4. Is sufficient evidence provided to support the relevance of the arguments made? | DR I | According to the PoA-DD the CPA has to provide reference/supporting document/information against any one of the mentioned barriers: Investment barrier: Reference/Supporting Document defined is deemed correct and in line with the UNFCCC requirements. | OK | OK |
| B.6. Emissions reductions | | | | |
| <i>B.6.1. Explanation of methodological choices</i> | | | | |
| B.6.1.1. Is it explained how the procedures provided in the methodology are applied by the proposed Programme of Activities? | DR | The emission reductions are calculated using the methodologies AMS.III.F ver. 10, AMS.III.H ver. 16 and the "Tool to calculate project, baseline and/or leakage from electricity consumption", version 01 and the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion" version 2. | OK | OK |
| B.6.1.2. Is every selection of options offered by the methodology correctly justified and is this justification in line with the situation verified on-site? | DR | CAR4 Every selection of options provided in the approved baseline and monitoring methodology applied shall be detailed and correctly justified in the PoA –DD. The last version of the PoA-DD explains and justifies clearly every selection of options taken according to the applied methodology. CAR4 is closed. | CAR4 | OK |
| B.6.1.3. Are the formulae required for the determination of emissions reductions correctly presented and used? (<i>Open excel, trazability of data, etc</i>) | DR I | Yes, the formulae required for the determination of emissions reductions are correctly presented and used | OK | OK |
| B.6.1.4 Are all data and assumptions listed in the POA-DD appropriate and calculations result in a conservative estimate | DR | Yes, all data and assumptions listed in the POA-DD are appropriate and | OK | OK |

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| of emission reductions? | | calculations result in a conservative estimate of emission reductions. | | |
| B.6.1.5. Are the formulae required for the determination of emission reductions correctly presented? | DR | Yes, the formulae required for the determination of emissions reductions are correctly presented. | OK | OK |
| <i>B.6.2. Data and parameters that are to be reported in the CDM-CPA at validation</i> | | | | |
| B.6.2.1. Is the list of parameters presented in chapter E.6.3 considered to be complete with regard to the requirements of the applied methodology? | DR | OK. The list of parameters presented in chapter E.6.3 is considered to be complete with regard to the requirements of the applied methodology | OK | OK |
| B.6.2.2. Are all the data derived from official data sources or replicable records and have been correctly quoted? | DR | OK. All the data are derived from official data sources or replicable records and have been correctly quoted | OK | OK |
| <i>B.6.3 Calculation of GHG Emission Reductions – Baseline Emissions</i> | | | | |
| <i>It is assessed whether the baseline emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.</i> | | | | |
| B.6.3.1 Are the calculations documented according to the approved methodology and in a complete and transparent manner? | DR I | No calculations have been detailed in the POA-DD. Calculations have been included in CPA-DD | OK | OK |
| B.6.3.2. Have conservative assumptions been used when calculating the baseline emissions? | DR I | Yes, conservative assumptions have been used when calculating the baseline emissions | OK | OK |
| B.6.3.3 Are uncertainties in the baseline emission estimates properly addressed? | DR I | Uncertainties are properly addressed. | OK | OK |
| B.6.3.4. Is additional background information on baseline data provided in Annex 3 of the POA-DD? Is this information consistent with data presented by other sections of the POA- | DR I | CAR5: Information included in Annex 3 is not consistent with data presented by other sections of the PoA-DD. The PoA-DD has been updated and its last version does not include | CAR5 | OK |

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| DD? | | inconsistencies between Annex 3 and other section of the document. CAR5 is closed. | | |
| <i>B.6.4 Calculation of GHG Emission Reductions – Project Emissions</i> <i>It is assessed whether the project emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.</i> | | | | |
| B.6.4.1 Are the calculations documented according to the approved methodology and in a complete and transparent manner? | DR I | <p>No calculations have been detailed in the POA-DD.</p> <p>Calculations have been included in CPA-DD</p> <p>However, formulae used in the PE calculation are not correct according to the applied methodology.</p> <p>CAR6: Project emissions are not correctly calculated according to the applied methodology. The PoA- DD shall be updated including the correct formulae for the PE calculation.</p> <p>The formulae used to calculate Project Emissions haven been correctly quoted in the latest version of the PoA-DD. Every option selected in the calculation has been correctly justified according to the applied methodology.</p> <p>CAR6 is closed.</p> | CAR6 | OK |
| B.6.4.2. Have conservative assumptions been used when calculating the project emissions? | DR I | Yes, conservative assumptions have been used when calculating the baseline emissions | OK | OK |
| B.6.4.3 Are uncertainties in the project emission estimates properly addressed? | DR I | Uncertainties are properly addressed. | OK | OK |
| <i>B.6.5. Calculation of GHG Emission Reductions – Leakage</i> <i>It is assessed whether leakage emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.</i> | | | | |

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| B.6.5.1 Are the leakage calculations documented according to the approved methodology and in a complete and transparent manner? | DR | The PoA-DD includes a complete explanation about the leakage calculation. According to paragraph 21 of AMS III.F v10, leakage does not apply because the project technology does include any equipment transferred from other activities nor will any existing equipment is transferred to another activity. This criterion is also included as | OK | OK |
| B.6.5.2. Have conservative assumptions been used when calculating the leakage emissions? | DR I | Yes, conservative assumptions have been used when calculating the leakage emissions. | OK | OK |
| B.6.5.3. Are uncertainties in the leakage emission estimates properly addressed? | DR I | Yes, uncertainties in the leakage emission estimates are properly addressed. | OK | OK |
| B.7. Application of the monitoring methodology and description of the monitoring plan | | | | |
| <i>B.7.1. Description of the monitoring plan</i> | | | | |
| B.7.1.1 Is the monitoring plan documented according to the approved methodology and relevant tools and in a complete and transparent manner? | DR I | Yes, it is in accordance with the PoA-DD, the Baseline and Monitoring methodology applied. | OK | OK |
| B.7.1.2. Does the monitoring methodology provide a consistent approach in the context of all parameters to be monitored and further information provided in the POA-DD? Are the monitoring provisions and data parameters that a CPA has to apply correctly described? | DR | Yes, the monitoring plan provides a consistent approach in the context of all parameters to be monitored. | OK | OK |
| B.7.1.3. Is the proposed sampling methodology used by the DOE for verification correctly described? | DR | Not applicable. No sampling methodology will be used. | N/A | N/A |

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| B.7.1.4. In case of no sampling methodology would be used; the system used to assure that no double counting occurs and that the status of verification can be determined anytime for each CPA is transparently described? | DR | Yes, the double counting methodology is clearly detailed in the section A.4.4.1 of the POA-DD. | OK | OK |
| B.7.1.5. Are the provisions made for archiving Programme of Activities emission data sufficient to enable later verification? | DR | Provisions for archiving data are consistent with the requirements of the applied methodology. A record keeping system has been prepared and it has been provided to the validation team. | OK | OK |
| B.7.1.6. Does the monitoring plan provide a clear description of the organization structure involved in monitoring activities and their responsibilities? | DR | Yes, the organizational structure is detailed in the POA-DD. The Operational and Management Plan is transparently detailed in the documentation. | OK | OK |
| B.7.1.7. If applicable: Does annex 4 provide useful information enabling a better understanding of the envisioned monitoring provisions? | DR | Yes, Annex 4 provides useful information enabling a better understanding of the envisioned monitoring provisions | OK | OK |
| B.7.1.8. Is the registration, monitoring, measurement and reporting procedure defined? | DR | Yes, the registration, monitoring, measurement and reporting procedure has been defined | OK | OK |
| <i>B.7.2 Compliance of the monitoring plan with the approved methodology</i> | | | | |
| B.7.2.1 Is the list of parameters considered to be complete with regard to the requirements of the applied methodology? Are all of them clearly described in the monitoring plan and in accordance with the methodology and tools? | DR | Yes. The list of parameters is considered complete. All the parameters are clearly described also. | OK | OK |
| B.7.2.2. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period? | DR | Yes it does. | OK | OK |

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| <i>B.7.3 Implementation of the Monitoring Plan</i> | | | | |
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| B.7.3.1 Do the means of monitoring of each of the parameters included in the plan complies with the requirements of the methodology? | DR | All the parameters are in accordance with the applied methodology. | OK | OK |
| B.7.3.2. Is the measurement equipment described and deemed appropriate? | DR | Yes, the measurement equipment of the parameters considered is detailed in the PoA-DD. | OK | OK |
| B.7.3.3. Are procedures identified for maintenance of monitoring equipment and installations? Are provisions regarding the calibration intervals included in the monitoring plan? | DR I | Yes, the calibration is forecasted in the Monitoring Plan. The periodicity of the calibration is detailed in the PoA-DD. | OK | OK |
| B.7.3.4. Is the measurement accuracy addressed and deemed appropriate? Are procedures in place on how to deal with erroneous measurements or lack of data? | DR I | Yes, the monitoring plan of the POA-DD includes procedures in case of errors or problems. | OK | OK |
| B.7.3.5. A record keeping system for each CPA under the POA is forecasted? | DR I | A record keeping system has been prepared in order to monitor the data of each of the CPA. | OK | OK |
| B.7.3.6. Is the monitoring Plan sufficient to ensure the verification of a proper implementation of the monitoring plan? | DR I | The Monitoring Plan is deemed to be sufficient to ensure the verification of a proper implementation of the project | OK | OK |
| B.7.3.7. Are procedures identified to ensure that those operating the CPAs are aware and have agreed that their activity is being subscribed to the POA? | DR I | As it is stated in the POA-DD, the project implementer of a SSC-CPA shall enter into a contractual arrangement with the coordinating entity including provisions regarding this issue. | OK | OK |
| B.8. Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/entity(ies) | | | | |

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| B.8.1. Is there any indication of a date when the baseline and monitoring was determined? | DR I | Yes, there is an indication on the date of completion of the application of the baseline study and monitoring methodology. | OK | OK |
| B.8.2. Is this consistent with the time line of the POA-DD history? | DR I | Yes, it is consistent. | OK | OK |
| B.8.3. Is the information on the person(s)/entity(ies) responsible for the application of the baseline and monitoring methodology provided consistent with the actual situation? | DR I | Yes, The baseline and monitoring sections have been prepared by Gestora de Programa Marco de Palma S.L | OK | OK |
| B.8.4. Is information provided whether this person / entity is also considered a project participant? | DR I | Yes, Gestora de Programa Marco Palma S.L is the CME and project participant. | OK | OK |
| C. DURATION OF THE PROGRAMME OF ACTIVITIES / CREDITING PERIOD | | | | |
| C.1. Duration of the Programme of Activities | | | | |
| C.1.1. Are the POA starting date and operational lifetime clearly defined and reasonable? | DR I | Yes, the starting date of the Programme is stated as 20/12/2011, the day of the publication of the documentation in the UNFCCC website. The operational lifetime stated in the POA-DD is 28 year. Thus, they are clearly defined and reasonable. | OK | OK |
| D. ENVIRONMENTAL IMPACTS | | | | |
| D.1. Documentation on the analysis of the environmental impacts, including transboundary impacts | | | | |
| D.1.1. Is the environment analysis undertaken at POA level? In negative case, is this issue correctly described and reflected in the CDM-POA-DD? | DR I | The environmental impacts analysis will be done at CPA level as it is clearly indicated in the POA-DD. | OK | OK |

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| D.1.2. Has the analysis of the environmental impacts of the Programme of Activities been sufficiently described in the POA-DD? | DR | Not applicable since the environmental analysis is made at CPA level. | N/A | N/A |
| D.1.3. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been approved? | DR | Not applicable since the environmental analysis is made at CPA level. | N/A | N/A |
| D.1.4. Will the Programme create any adverse environmental effects? Have they identified as significant? | DR | Not applicable since the environmental analysis is made at CPA level. | N/A | N/A |
| D.1.5. Are transboundary environmental impacts identified in the analysis? | DR | Not applicable since the environmental analysis is made at CPA level. | N/A | N/A |
| D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party. | | | | |
| D.2.1. Have the identified environmental impacts been addressed in the programme design sufficiently? | DR | Not applicable since the environmental analysis is made at CPA level. | N/A | N/A |
| D.2.2. Does the programme comply with any other environmental legislation in the host country? | DR | Not applicable since the environmental analysis is made at CPA level. | N/A | N/A |
| E. STAKEHOLDERS' COMMENTS | | | | |
| E.1. Brief description how comments by local stakeholders have been invited and compiled | | | | |
| E.1.1. Is the stakeholders consultation process undertaken at POA level? In negative case, is this issue correctly described and reflected in the CDM-POA-DD? | DR I | The stakeholders consultation process will be done at CPA level as it is clearly indicated in the POA-DD. | OK | OK |

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| E.1.2. Have relevant stakeholders been consulted? Is the exact date of the consultation process included in the POA-DD | DR I | Not applicable since the stakeholders consultation process is made at CPA level. | N/A | N/A |
| E.1.3. Have appropriate media been used to invite comments by local stakeholders? | DR I | Not applicable since the stakeholders consultation process is made at CPA level. | N/A | N/A |
| E.1.4. 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? | DR I | Not applicable since the stakeholders consultation process is made at CPA level. | N/A | N/A |
| E.1.5. Is the undertaken stakeholder process that was carried out described in a complete and transparent manner? | DR I | Not applicable since the stakeholders consultation process is made at CPA level. | N/A | N/A |
| E.2. Summary of the comments received | | | | |
| E.2.1. Is a summary of the stakeholder comments received provided? | DR | Not applicable since the stakeholders consultation process is made at CPA level. | N/A | N/A |
| E.3. Report on how due account was taken of any comments received | | | | |
| E.3.1. Has due account been taken of any stakeholder comments received? | DR | Not applicable since the stakeholders consultation process is made at CPA level. | N/A | N/A |

ANNEX 2: CERTIFICATES OF QUALIFICATION VALIDATION AND TECHNICAL REVIEW TEAM

CERTIFICATE OF QUALIFICATION

Subject: Validation and Technical Review Team for "Promotion of POME and EFB Co Composting"

Madrid, 20th December 2012

Hereby I confirm the following records of qualification, according with AENOR internal instruction "Validation, Verification and Certification of Clean Development Mechanism (CDM) project activities" IE-DTC-039, and in relation with the validation process of the above mentioned project activity:

Name: **Alfonso Medrano Gutiérrez**

CDM Chief Validator: Yes

CDM Validator: Yes

CDM Chief Verifier: N/A

CDM Verifier: N/A

Technical Expert: No

Technical areas related with the project activity: -

T.A 13.1 Waste handling and disposal



José Luis TEJERA OLIVER
CDM Operational Director

VALIDATION REPORT

"Promotion of POME and EFB Co-Composting"

CERTIFICATE OF QUALIFICATION

Subject: Validation and Technical Review Team for "Promotion of POME and EFB Co Composting"

Madrid, 20th December 2012

Hereby I confirm the following records of qualification, according with AENOR internal instruction "Validation, Verification and Certification of Clean Development Mechanism (CDM) project activities" IE-DTC-039, and in relation with the validation process of the above mentioned project activity:

Name: **José Luis Fuentes Pérez**

CDM Chief Validator: Yes

CDM Validator: Yes

CDM Chief Verifier: N/A

CDM Verifier: N/A

Technical Expert: Yes

Technical areas related with the project activity:

T.A 13.1 Waste handling and disposal



José Luis TEJERA OLIVER
CDM Operational Director

VALIDATION REPORT

"Promotion of POME and EFB Co-Composting"

CERTIFICATE OF QUALIFICATION

Subject: Validation and Technical Review Team for "Promotion of POME and EFB Co Composting"

Madrid, 20th December 2012

Hereby I confirm the following records of qualification, according with AENOR internal instruction "Validation, Verification and Certification of Clean Development Mechanism (CDM) project activities" IE-DTC-039, and in relation with the validation process of the above mentioned project activity:

Name: **Elena Llorente Pérez**

CDM Chief Validator: Yes

CDM Validator: Yes

CDM Chief Verifier: N/A

CDM Verifier: N/A

Technical Expert: No

Technical areas related with the project activity: -

T.A 13.1 Waste handling and disposal



José Luis TEJERA OLIVER
CDM Operational Director

VALIDATION REPORT

"Promotion of POME and EFB Co-Composting"

CERTIFICATE OF QUALIFICATION

Subject: Validation and Technical Review Team for "Promotion of POME and EFB Co Composting"

Madrid, 20th December 2012

Hereby I confirm the following records of qualification, according with AENOR internal instruction "Validation, Verification and Certification of Clean Development Mechanism (CDM) project activities" IE-DTC-039, and in relation with the validation process of the above mentioned project activity:

Name: **Marcelino Pellitero Martínez**

CDM Chief Validator: Yes

CDM Validator: Yes

CDM Chief Verifier: N/A

CDM Verifier: N/A

Technical Expert: Yes

Technical areas related with the project activity:

T.A 13.1 Waste handling and disposal



José Luis TEJERA OLIVER
CDM Operational Director