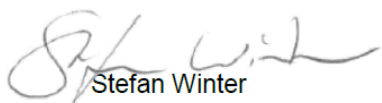




**Verification and certification report form for
CDM project activities
(Version 03.0)**

Complete this form in accordance with the instructions attached at the end of this form.

BASIC INFORMATION

Title and UNFCCC reference number of the project activity	Switching of fuel from coal to palm oil mill biomass waste residues at Industrial de Oleaginosas Americanas S.A. (INOLASA) UNFCCC ID: 1314
Scale of the project activity	<input type="checkbox"/> Large-scale <input checked="" type="checkbox"/> Small-scale
Version number of the verification and certification report	2.0
Completion date of the verification and certification report	10/01/2020
Monitoring period number and duration of this monitoring period	1 st MP of the 2 nd CP (9 th MP) 30/11/2014 to 30/11/2018 (including both days)
Version number of the monitoring report to which this report applies	4.0
Crediting period of the project activity corresponding to this monitoring period	30/11/2014 – 29/11/2021 (including both days)
Project participants	Industrial de Oleaginosas Americanas S.A. (INOLASA)
Host Party	Costa Rica
Applied methodologies and standardized baselines	"Thermal energy production with or without electricity", AMS-I.C, version 20
Mandatory sectoral scopes	Scope: 1 / Technical Area: 1.1
Conditional sectoral scopes, if applicable	N/A
Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD	195,203 t CO _{2e}
Certified amount of GHG emission reductions or GHG removals for this monitoring period	134,383 t CO _{2e}
Name and UNFCCC reference number of the DOE	TÜV NORD CERT GmbH; E-0022
Name, position and signature of the approver of the verification and certification report	 Stefan Winter Final Approver

SECTION A. Executive summary

Industrial de Oleaginosas Americanas S.A. (INOLASA) (hereafter referred as “Inolasa”) has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 2nd periodic verification of the project:

“Switching of fuel from coal to palm oil mill biomass waste residues
at Industrial de Oleaginosas Americanas S.A. (INOLASA)”

with regard to the relevant requirements for CDM project activities.

This verification covers the period as indicated on the title page.

The project reduces GHG emissions due to the use of hydro power to generate renewable electricity to be delivered to the national grid of Guatemala which is mainly fossil fuel dominated.

Details of the project location are given in table A-1 below:

Table A-1: Project Location

No.	Project Location
Host Country	Costa Rica
Region:	Puntarenas
Project location address:	Barranca
Latitude:	09°95'23.5"N
Longitude:	84°42'36.9"W

Basic technical details of the project are summarized in table A-2.

Table - A-2: Technical data of the project activity

Parameter	Unit	Value
Boiler steam capacity	kg/h	35,000
Boiler design pressure	bar	35
Steam Temperature (saturated)	°C	192
Feed water temperature	°C	120 +/- 5%
Air temperature at F.D Fan	°C	220 to 240
Actual steam evaporation	kg/h	35,000
Dust emission	mg/nm ³	<=100
Overall efficiency on Gross Calorific value of fuel	%	80

As a result of this verification, the verifier confirms that:

- all operations of the project are implemented and installed as planned and described in the validated project design document.
- the monitoring plan is in accordance with the applied approved CDM methodology,
- the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately.
- the monitoring system is in place and functional. The project has generated GHG emission reductions.

As the result of this periodic verification, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner.

SECTION B. Verification team, technical reviewer and approver**B.1. Verification team member**

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Verification findings
1.	Team Leader	EI	Oliver	Quireza	TN México	x	x	x	x
2.	Team member	EI	Raul	Mitre	TN Mexico	x	x	x	x

B.2. Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	IR	Stöhr	Christina	TÜV NORD CERT
2.	Technical reviewer/ Approver	IR	Winter	Stefan	TÜV NORD CERT

SECTION C. Application of materiality

In order to ensure a complete, transparent and timely execution of the verification task the team leader has planned the complete sequence of events necessary to arrive at a substantiated final verification opinion.

Various tools have been established in order to ensure an effective verification planning.

Materiality Threshold

The verification is based on the materiality threshold identified in table C-1 below:

Table C-1: Applied Materiality Threshold

	Threshold	Related to
<input type="checkbox"/>	0.5 %	Emission reductions or removals for registered CDM project activities achieving a total emission reduction or removal equal to or more than 500,000 tonnes of carbon dioxide equivalent per year ¹ ;
<input type="checkbox"/>	1 %	Emission reductions or removals for registered CDM project activities achieving a total emission reduction or removal of between 300,000 and 500,000 tonnes of carbon dioxide equivalent per year;
<input type="checkbox"/>	2 %	Emission reductions or removals for registered large-scale CDM project activities achieving a total emission reduction or removal of 300,000 tonnes of carbon dioxide equivalent per year or less;
<input checked="" type="checkbox"/>	5 %	Emission reductions or removals for registered small-scale CDM project activities other than registered CDM project activities covered under next category below;

¹ A year refers to a period of 12 consecutive months.

	Threshold	Related to
<input type="checkbox"/>	10 %	Emission reductions or removals for the type of registered CDM project activities referred to in decision 3/CMP.6, paragraph 38 (referred to as microscale project activities).

Strategic Analysis

At the beginning of the verification the verification team leader has assessed the nature, scale and complexity of the verification tasks by carrying out a strategic analysis of all activities relevant to the project activity. The team leader has collected and reviewed the information relevant to assess that the designated verification team is sufficiently competent to carry out the verification and to ensure that it is able to conduct the necessary risk analysis.

Risk analysis and detailed audit testing planning

For the identification and assessment of potential reporting risks and to determine the necessary detailed audit testing procedures for residual risk areas the following table is used.

C.1. Consideration of materiality in planning the verification

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1	Omissions and misstatements when transferring information from scales database (ExactusERP) to the biomass weight logbook	low	Even though there is procedures in place for all metering and data transfer processes the personnel could misstates important weight data when performing the biomass reports	Interview with personnel as well as demonstration of how the data transfer is done. Cross check weigh data from biomass logbook vs. original tickets data as per sampling plan
2	Omissions and misstatements in data transfer from SCADA into digital Excel ER spreadsheet	low	Ineffective quality control of data transfer due to unclear QA/QC procedure	Check QM procedure/manual. PP may demonstrate how to transfer data and how this is crosschecked. Conduct interview with related personnel whether procedure is actually conducted but not adequately described
3	Missing data due to failure of measurement equipment	medium	The monitoring plan defines emergency procedures in case a meter fails. Besides meters supplier's relationship is available for fast exchange	Check if related meters are installed as per monitoring plan. Check if emergency procedure is known across related personnel via interviews. Check back-up meters on correct calibration

C.2. Consideration of materiality in conducting the verification

Based on the verification planning the verification has been carried out. The concept of materiality has been considered. A breakdown of the chosen approaches is included in the following table.

Parameter	Approach*	Errors* detected	Corrected	Remaining verification risk
EG _{thermal,y}	CDC	<input type="checkbox"/>	<input type="checkbox"/>	Not material
EC _{PJ,j,y}	CDC	<input type="checkbox"/>	<input type="checkbox"/>	Not material

Parameter	Approach*	Errors* detected	Corrected	Remaining verification risk
FR _y	SiRS	<input type="checkbox"/>	<input type="checkbox"/>	Not material
D _{f,j}	CDC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Not material
B _{Biomss,y}	CDC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Not material
Moisture content of biomass	CDC	<input type="checkbox"/>	<input type="checkbox"/>	Not material
Aggregate	0%			Materiality threshold not exceeded

*) incl. omissions and misstatements

+) Verification Approaches:

CDC: Complete data check of data including all data aggregation steps

NDC: Non-complete data check – omissions not material

SPL: Sampling approach (all data available)

ASP: Acceptance Sampling

COM: Data check at higher data aggregation levels and sampling at original data levels

The verification was basically carried out as per the verification plan. However, based on the actual situation on-site and the errors, omissions and misstatements identified during the verification minor deviations from the original plan occurred. However, due to the insignificance no major revision of the overall plan was required. Esp. there was no need for significant modification of the sampling approaches or for additional / less locations to be visited during the on-site.

SECTION D. Means of verification

D.1. Desk/document review

During the desk review all documents initially provided by the client and publicly available documents relevant for the verification were reviewed. The main documents are listed below:

- the last revision of the PDD including the monitoring plan^{/PDD/},
- the last revision of the validation report^{/VAL/},
- documentation of previous verifications^{/VER/}
- the monitoring report, including the claimed emission reductions for the project^{/MR/},
- the emission reduction calculation spreadsheet^{/XLS/}.

Other supporting documents, such as publicly available information on the UNFCCC website and background information were also reviewed.

Duration of on-site inspection: 20/03/2019 to 21/03/2019				
No.	Activity performed on-site	Site location	Date	Team member
1.	Kick off meeting Evidence assessment	Inolasa production plant	20/03/2019	Oliver Quireza Raul Mitre
2.	Viewing of relevant site points	Inolasa production plant	20/03/2019	Oliver Quireza Raul Mitre
3.	Evidence assessment	Inolasa production plant	20/03/2019	Oliver Quireza Raul Mitre
4.	Preparation of the DVR	Inolasa production plant	21/03/2019	Oliver Quireza Raul Mitre
5.	Findings summary to the client	Inolasa production plant	21/03/2019	Oliver Quireza Raul Mitre
6.	Working day auditor-client to close findings	Inolasa production plant	21/03/2019	Oliver Quireza Raul Mitre
7.	Closing meeting	Inolasa production plant	21/03/2019	Oliver Quireza Raul Mitre

D.2. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Castrillo Martin	Danilo	Inolasa	20-21/03/2019	Energy management	Raul Mitre Oliver Quireza
2.	Castro Bonilla	Sofia	GEO Ingeniería	20-21/03/2019	Consultant	Raul Mitre Oliver Quireza
3.	Gonzalez	Ricardo	Inolasa	20-21/03/2019	Process Engineer	Raul Mitre Oliver Quireza
4.	Rojas	Karina	Inolasa	20-21/03/2019	Process Analyst	Raul Mitre Oliver Quireza
5.	Rodriguez	Martin	GEO Ingeniería	20-21/03/2019	Consultant	Raul Mitre Oliver Quireza
6	Menezes	Mauricio	Inolasa	20/03/2019	Logistics	Raul Mitre Oliver Quireza

D.3. Sampling approach**D.3.1 Sampling during monitoring**

<input checked="" type="checkbox"/>	No sampling approach has been used by the PP to determine the monitored parameters				
<input type="checkbox"/>	A sampling approach has been taken for the following monitored parameter(s):				
	Parameter	Sampling approach ¹⁾	Sampling Type ²⁾	Population	Sample Size

¹⁾ Sampling Approaches:

SiRS: Simple Random Sampling
 StRS: Stratified Random Sampling
 SS: Systematic Sampling
 CS: Cluster Sampling
 MSS: Multi-stage Sampling
 AS: Acceptance Sampling

²⁾ Sampling Types:

PS: Parameter Sampling

D.3.2 Sampling approaches during verification

<input type="checkbox"/>	No sampling approach has been used by the VT to verify the monitored parameters				
<input checked="" type="checkbox"/>	A sampling approach has been applied by the VT for the following monitored parameter(s):				
	Parameter	Sampling approach ¹⁾	Sampling Type ²⁾	Population	Sample Size
	FR _y	SiRS	PS	4,510	67

¹⁾ Sampling Approaches:

SiRS: Simple Random Sampling
 StRS: Stratified Random Sampling
 SS: Systematic Sampling
 CS: Cluster Sampling
 MSS: Multi-stage Sampling

²⁾ Sampling Types:

AS: Acceptance Sampling
 PS: Parameter Sampling
 COM: Full data check at higher data aggregation levels and sampling at original data levels

Sampling for parameter FR_y

As per PDD, for the correctness of parameter FR_y, the freight transported biomass has to be cross-checked against the purchase invoices. As the trips amount during the MP is very high (4,510) and the invoice documentation also very abundant, the VT performed a sampling for individual trips checking. Although it is important to mention that the monthly biomass was checked case by case.

The sample calculation is explained in section below and the calculation is done in xls file "Sample Size DOE".

Sample Size Calculation

According to "Best practices examples focusing on sample size and reliability calculations", the following equation is applied for sample size calculation.

$$n \geq \frac{z^2 \times N \times V}{(N - 1) \times \text{precision}^2 + z^2 \times V}$$

Where:

$$V = \frac{p \times (1 - p)}{p^2}$$

n	Number of elements to be sampled.
N	Total number of elements in the population, (see table below for each of the parameters)
p	Proportion: Set to 0.5 based on the very conservative estimation that 50% of the values checked are found to be incorrect.
z	Constant referring to the level of confidence (for this case 1.645 for 90% as per Guideline for Sampling and Surveys Appendix 1 §9 for SSC project activities).
precision	Required precision (for this case 10%=0.1 as per Guideline for Sampling and Surveys Appendix 1 §9 for SSC project activities).

The sample calculation is detailed in the calculation sheet "sample size DOE".

D.4. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Compliance of the monitoring report with the monitoring report form	-	1	-
Compliance of the project implementation and operation with the registered PDD	-	5	1
Post-registration changes	-	-	-
Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines	-	-	-
Compliance of monitoring activities with the registered monitoring plan	-	4	-
Compliance with the calibration frequency requirements for measuring instruments	-	-	-
Assessment of data and calculation of emission reductions or net removals	1	3	-
Assessment of reported sustainable development co-benefits	-	-	-
Global stakeholder consultation	-	-	-
Others (please specify)	-	-	-
Total	1	13	1

SECTION E. Verification findings

E.1. Compliance of the monitoring report with the monitoring report form

Means of verification	<p>A draft monitoring report was submitted to the verification team by the project participants. The DOE has made this report publicly available prior to the start of the verification activities. No comments were received.</p> <p>By means of the UNFCCC website it has been checked whether the latest applicable MR template CDM-MR-FORM has been used.</p> <p>Further it has been checked whether the latest instructions for filling out the MR template have been followed. Every section has been checked against the respective guidance.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /MRT/ • /unfccc/ 	
Findings	<input checked="" type="checkbox"/>	The latest reporting template CDM-MR-FORM as listed on the UNFCCC website has been used for the Monitoring Report to be uploaded.
	<input checked="" type="checkbox"/>	The latest instructions for filling out the MR have been followed. No adverse finding has been identified in the course of this verification.
	<input checked="" type="checkbox"/>	The respective requirements have widely been complied with; however; the following issues needed to be addressed in this context:
		CAR 09
Conclusion	<input type="checkbox"/>	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
		The latest version of the MR has been used and The latest instructions for filling out the MR have been followed. No adverse finding has been identified in the course of this verification

E.2. Remaining forward action requests from validation and/or previous verifications

During the validation the validating DOE might have raised issues that could not be closed or resolved during the validation stage. For this purpose FARs might have been raised. Likewise FARs might have been raised in the course of previous verifications.

In the course of this verification the latest version of the PDD ^{/PDD/} and the previous verification report ^{/VER/}, where applicable, have been checked in order to identify any remaining forward action requests. For the current monitoring period the following applies:

(i) Open issues from validation:

<input checked="" type="checkbox"/>	There were no open issues which have been addressed in the latest version of the validation report.
<input type="checkbox"/>	All open issues from the validation have been appropriately addressed in the context of previous verifications.
<input type="checkbox"/>	All issues related to the validation have been appropriately addressed in the course of the current monitoring period (for details please refer to appendix 4)
<input type="checkbox"/>	The following issues related to the validation have not yet been appropriately addressed (for details please refer to appendix 4):
	- N/A

(ii) Open issues from previous verifications:

<input type="checkbox"/>	N/A – as this is the first monitoring period for this CDM project activity.
<input checked="" type="checkbox"/>	There were no open issues which have been addressed in the previous verification report
<input type="checkbox"/>	All issues related to the previous verification have been appropriately addressed in the course of the current monitoring period (for details please refer to appendix 4)

<input type="checkbox"/>	The following issues related to the previous verification have not yet been appropriately addressed (for details please refer to appendix 4):
	N/A

E.3. Compliance of the project implementation and operation with the registered project design document

Means of verification	<p>By means of an in-depth review of the PDD in its latest form – as downloaded from the UNFCCC project site - and the checks carried out during the on-site visit an assessment has been carried out whether the project has been implemented and operated in line with the latest approved version of the PDD and whether all physical features of the project are in place. The following has been checked: implemented technology, project equipment as well as monitoring and metering equipment.</p> <p>Further it has been checked if relevant technical equipment of the project activity has been exchanged or modified during the monitoring period and consistent notations of key equipment (meters etc.) in PDD, MR and calculation spreadsheet are applied.</p> <p>Interviews with operational personnel have been carried out, QMS records, maintenance records, instrument specifications were checked in this context. Special focus has further been laid to determine whether a potential phase wise implementation has occurred within the crediting period or any delays with respect to the starting dates have occurred.</p> <p>Further it has been checked, no deviations from the registered project design occurred.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /PDD/ • /MR/ • /VVS/ • /XLS/ • /PROC/ • /unfccc/ 	
Findings	<input type="checkbox"/>	The project has been implemented as described in the latest version of the PDD as well as in section B.1 of the monitoring report. No deviations thereof have been identified in the course of this verification.
	<input checked="" type="checkbox"/>	<p>The following deviations from the registered / approved project design and or the project description in the MR have been identified in the course of this verification (for further details please refer to section E.4):</p> <ul style="list-style-type: none"> - Installation of a new boiler Zhengzhou (SN 4T02-1401) with a capacity of 45t/h and steam temperature of 350°C - Installation of a new electricity generator TD Power Systems – Toyo Denki (Turbine SN TST-2060-158) with a capacity of 4000 kW
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs have been raised: CAR 01, CAR 8, CAR 10, CAR 11, CAR 12 and FAR 01
		<i>In case of phased implementation:</i>
	<input checked="" type="checkbox"/>	N/A
	<input type="checkbox"/>	The phased implementation has correctly and in sufficient detail been described in the latest version of the PDD.
	<input type="checkbox"/>	The description in section B.1 of the MR differs in content or the level of detail from the latest version of the PDD. However, the description in the MR is correct and reflects the situation during the site inspection.
Conclusion	<input type="checkbox"/>	The project description in the MR is not deemed sufficient. The detailed implementation timeline is as follows:
	<input type="checkbox"/>	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.

	<input checked="" type="checkbox"/>	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
		The revised MR includes the description of the newer boiler with capacity of 45,000 kg per hour. It is also confirmed by the VT that according to the raw data, logbooks and interviewed personnel that the current MP has not been affected by the operation of the new boiler as it started operation after the current MP and also it could be confirmed during the site visit that the steam generated by the new boiler cannot be measured physically by the same flow meter because the valves and pipes arrangement make it impossible. Nevertheless, FAR 01 remains.

E.4. Post-registration changes

E.4.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents²

It has been checked whether Temporary deviations from the registered monitoring plan (TDfrMP) or Temporary deviations from monitoring methodology or standardized baseline (TDfMM) have been applied during this monitoring period. The result is summarized in the table below.

<input checked="" type="checkbox"/>	No Temporary deviations from the registered monitoring plan (TDfrMP) or Temporary deviations from monitoring methodology or standardized baseline (TDfMM) have been submitted to the UNFCCC prior to the current monitoring period.		
<input type="checkbox"/>	The following TDfrMP or TDfMM have been approved or are under approval by the UNFCCC		
	1	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.:)
		Appr.date	
		Ref. No.	
	2	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.:)
		Appr.date	
		Ref.No.	
<input checked="" type="checkbox"/>	During the verification of the current MP no need for a TDfrMP or TDfMM has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA		
<input type="checkbox"/>	An approval of the following TDfrMP or TDfMM is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.		
	1	Issue:	
	2	Issue:	
<input type="checkbox"/>	The following TDfrMP or TDfMM for which appendix 1 of the PS is applicable have been applied:		
	1	Issue:	
	2	Issue:	

E.4.2. Corrections

It has been checked whether any corrections to project information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

² Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

<input checked="" type="checkbox"/>	During the verification of the current MP no need for corrections has been identified.	
<input type="checkbox"/>	The following corrections have been applied:	
1	Issue:	
	The PDD has been revised accordingly: (New) version No.: Revision date:	
	It is confirmed that the updated / corrected information is an accurate reflection of the actual project information and that the corrected parameters are in accordance with the applied methodology and the monitoring plan.	
	<input checked="" type="checkbox"/> A related post registration change has been submitted prior to the issuance request. The approval has been received on 24/04/2014 via approval number PRC-1314-002. <input type="checkbox"/> A related post registration change is submitted along with this issuance request. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.	

E.4.3. Changes to the start date of the crediting period

<input type="checkbox"/>	N/A - as this is not the first verification within the crediting period
<input checked="" type="checkbox"/>	The PPs do not intend to change the start date of the crediting period.
<input type="checkbox"/>	As the change in the start date was below the related time period as indicated in PS § 234 and § 235 no prior approval was required but only a notification. This notification has been submitted by the PP without involvement of the DOE. The change and new start date has been checked from the related UNFCCC project webpage.
<input type="checkbox"/>	The PPs intend to change the start date of the crediting period. As the intended change in start date beyond the related time period as indicated in PS § 236 and as per §237 prior approval by the Board is required. For detailed assessment of the change please refer to related PRC validation report. As per assessment in this report the DOE confirms that the change to the start date of the crediting period are in line with the related requirements of the VVS and PS.
<input type="checkbox"/>	The approval to change the start date of the crediting period has been received on XX without approval number

E.4.4. Inclusion of a monitoring plan

<input checked="" type="checkbox"/>	N/A - as this monitoring plan was part of the registered PDD
<input type="checkbox"/>	In line with PS § 238 and §78 the PP has forwarded a monitoring plan to the DOE for validation. No prior approval of the monitoring plan was required as the PP in line with PS § 78 wished to submit the monitoring plan together with the request for issuance for the first monitoring period. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.
<input type="checkbox"/>	In line with PS § 238 and §78 the PP submitted a monitoring plan prior to the submission of the request for issuance for validation to the DOE. A DOE has assessed the monitoring plan in line with related VVS requirements and submitted a related PRC report for prior approval. The approval has been received on DD/MM/YYYY via approval number PRC-XXXX-00Z.

E.4.5. Permanent changes from registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents

It has been checked whether any permanent changes from the registered monitoring plan (PCfrMP) or applied methodologies (PCfMM) including standardized baselines (PCfSB) have been approved prior or during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input type="checkbox"/>	No PCfrMP, PCfMM or PCfSB have been submitted to the UNFCCC prior to the current monitoring period		
<input checked="" type="checkbox"/>	The following PCfrMP, PCfMM or PCfSB have been approved or are under approval by the UNFCCC		
	1	Title	Elimination of the monitoring of coal as co-fired fuel
		Status	<input type="checkbox"/> under approval; <input checked="" type="checkbox"/> approved
		Appr.date	31/05/2011
		Ref. No.	
	2	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved
		Appr.date	
		Ref.No.	
<input checked="" type="checkbox"/>	During the verification of the current MP no need for a PCfrMP, PCfMM or PCfSB has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA		
<input type="checkbox"/>	An approval of the following PCfrMP, PCfMM or PCfSB is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply.		
	1	Issue:	
	2	Issue:	
<input type="checkbox"/>	The following PCfrMP, PCfMM or PCfSB for which appendix 1 of the PS is applicable have been applied:		
	1	Issue:	
	2	Issue:	

E.4.6. Changes to the project design

It has been checked whether any changes to the project design (CoPD) have been approved prior or during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input type="checkbox"/>	No CoPD has been submitted to the UNFCCC prior to the current monitoring period		
<input checked="" type="checkbox"/>	The following CoPD have been approved or are under approval by the UNFCCC		
	1	Title	New biomasses not originally considered in the PDD were used during the current monitoring period. Furthermore additional sources of palm oil mill biomasses were also used.
		Status	<input type="checkbox"/> under approval; <input checked="" type="checkbox"/> approved
		Appr.date	24/04/2014
		Ref. No.	PRC-1314-002
	2	Title	1. Ex ante energy demand increase Biomass profile change
		Status	<input type="checkbox"/> under approval; <input checked="" type="checkbox"/> approved

	Appr.date	24/04/2014Not available	
	Ref.No.	PRC-1314-002	
<input checked="" type="checkbox"/>	During the verification of the current MP no need for a CoPD has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA		
<input type="checkbox"/>	An approval of the following CoPD.is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply.		
	1	Issue:	
	2	Issue:	
<input type="checkbox"/>	The following CoPD for which appendix 1 of the PS is applicable have been applied:		
	1	Issue:	
	2	Issue:	

E.4.7. Changes specific to afforestation and reforestation project activities

<input checked="" type="checkbox"/>	N/A - as this is no A/R project activity
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E.5. Compliance of the registered monitoring plan with applied methodologies, applied standardized baselines, and other applied methodological regulatory documents

Means of verification	By means of comparison of the MR with (i) the applied CDM methodology (ii) all applicable CDM Meth tools and (iii) if applicable, a standardized baseline the verification team has checked whether the MP is in compliance with the MP related requirements of the applied methodology/tools/SB. The following sources of information have been used in this context: <ul style="list-style-type: none"> • /MR/ • /METH/ • /TA/ • /unfccc/ 		
Findings	<input checked="" type="checkbox"/>	The MP is completely in accordance with the approved methodology applied by the CDM project (last registered/approved version of the PDD) The breakdown of MP accordance of the referenced tools is as follows:	
	<input checked="" type="checkbox"/>	1	Title (of the tool) <i>Project and leakage emissions from transportation of freight</i> Version 01.1.0 MP compliance <input checked="" type="checkbox"/> full compliance <input type="checkbox"/> findings have been raised <input type="checkbox"/> N/A (for MP)
		2	Title (of the tool) <i>Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation"</i> Version 03.0 MP compliance <input checked="" type="checkbox"/> full compliance <input type="checkbox"/> findings have been raised <input type="checkbox"/> N/A
		3	Title (of the tool) <i>Leakage in biomass small-scale project activities" (version 04.0)</i> Version 04.0 MP compliance <input checked="" type="checkbox"/> full compliance

	<input type="checkbox"/>	findings have been raised					
	<input type="checkbox"/>	N/A					
	<input type="checkbox"/>	The breakdown of MP accordance of the applicable SB is as follows:					
	1	<table border="1"> <tr> <td>Title (of the SB)</td> <td>-</td> </tr> <tr> <td>Version</td> <td>-</td> </tr> <tr> <td>MP compliance</td> <td></td> </tr> </table>	Title (of the SB)	-	Version	-	MP compliance
Title (of the SB)	-						
Version	-						
MP compliance							
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:					
Conclusion	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.					
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.					
	-						

E.6. Compliance of monitoring activities with the registered monitoring plan

E.6.1. Data and parameters fixed ex ante or at renewal of crediting period

Means of verification	By means of comparison of the MR and the ER calculation with the latest version of the registered PDD the verification team has checked whether all parameters fixed ex-ante have been applied correctly.				
	The following list of ex-ante fixed parameters have been applied:				
	No	Parameter	Description	Value	Unit
	1	$\eta_{BL,thermal}$	Efficiency of the baseline (coal based) boiler	78	%
	2	EF_{FF,CO_2}	CO ₂ emission factor of the fossil fuel that would have been used in the baseline plant	77.4	tCO ₂ /TJ
	3	$EF_{EL,j,y}$	Combined margin CO ₂ emission factor	0.2288	tCO ₂ /MWh
	4	$EF_{CO_2,f}$	Default CO ₂ emission factor for freight transportation activity f	Light: 245 Heavy: 129	gCO ₂ /t km
	5	$TDL_{j,y}$	Average technical transmission and distribution losses for providing electricity to source j in year y	11.6	%
	The following sources of information have been used in this context:				
	<ul style="list-style-type: none"> • /MR/ • /XLS/ • /PDD/ • /PS/ • /VVS/ • /unfccc/ 				
Findings	<input checked="" type="checkbox"/>	The MR and the ER calculation have considered the parameters fixed ex-ante or at the renewal of the crediting period correctly, no deviations have been observed.			
	<input type="checkbox"/>	The following deviations from the parameters fixed ex-ante or at renewal of crediting period have been identified in the course of this verification:			
	<input type="checkbox"/>	- N/A			
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:			
Conclusion	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.			

	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
		All values are consistent with the registered PDD and applied correctly during this monitoring period for the ER calculation.

E.6.2. Data and parameters monitored

Means of verification	<p>During the verification all relevant monitoring parameters (as listed in chapter B.7.1 of the PDD) have been verified with regard to the</p> <ul style="list-style-type: none"> (i) appropriateness of the applied measurement / determination method, (ii) the correctness of the values applied for ER calculation, (iii) the accuracy, and applied QA/QC measures. <p>The results as well as the verification procedure are described parameter-wise in the project specific verification checklist (Appendix 5).</p>	
Findings	CAR 02, CAR 05, CAR 06, CAR 07	
Conclusion	<input type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
		It can be confirmed that all monitoring parameters have been measured / determined without material misstatements and in line with all applicable standards and relevant requirements.

E.6.3. Implementation of sampling plan

Means of verification	<p>The verification team has been checked whether the PPs have applied a sampling approach to determine the monitored values.</p> <p>Further it has been checked whether the PPs have correctly applied the implemented sampling plan including</p> <ul style="list-style-type: none"> (i) description of the implemented sampling design (ii) collected data (iii) analysis of collected data (iv) demonstration on whether the required confidence/precision has been met. <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /XLS/ • /PDD/. 		
Findings	<input checked="" type="checkbox"/>	The PPs have not applied sampling approaches for the parameters monitored.	
	<input type="checkbox"/>	The PPs have applied sampling approaches for the following parameters monitored.	
		1	Parameter: Name:
			Description on how the sampling efforts and survey comply with the validated sampling plan:
		2	Parameter: Name:
			Description on how the sampling efforts and survey comply with the validated sampling plan:
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:	
Conclusion	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.	
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.	
	-		

E.7. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	<p>During the verification the relevant monitoring equipment has been checked whether the calibration requirements have been met; especially if the calibration frequency is in line with the requirements of the validated PDD and/or the applicable calibration standards.</p> <p>The results as well as the verification procedure are described equipment-wise in the project specific verification checklist (Appendix 6).</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /XLS/ • /CC/. 	
Findings	<input type="checkbox"/>	<p>Based on the details listed in appendix 6 the verification team can confirm that all installed monitoring equipment has been duly calibrated for this entire monitoring period.</p>
	<input checked="" type="checkbox"/>	<p>Based on the assessment and information as per appendix 6 delay(s) in calibration have been identified. The PP has applied the maximum permissible error of the instrument to the measured values taken during the period between the scheduled date of calibration and the actual date of calibration. From the related calibration certificates and emission reduction calculation the verification team confirms that the maximum permissible error has been applied in a conservative manner so that the adjusted measured values due to the delayed calibration result in fewer claimed emission reductions. For details please refer to appendix 6</p>
	<input type="checkbox"/>	<p>In this context the following CARs, CLs, FARs have been raised:</p>
Conclusion	<input checked="" type="checkbox"/>	<p>No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.</p>
	<input type="checkbox"/>	<p>The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.</p>

E.8. Assessment of data and calculation of emission reductions or net removals**E.8.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks**

Means of verification	<p>During the verification the calculation of baseline GHG emissions has been checked. In detail the following has been verified:</p> <ul style="list-style-type: none"> • <i>Transparency</i>: It has been checked whether the calculation of baseline emissions is fully traceable and, where used, the Excel calculation provides all calculation formulae. • <i>Parameter consistency</i>: It has been checked whether all internal and external parameters and data used for the calculation are applied consistently in the monitoring report and the calculation spreadsheet. • <i>Correctness</i>: It has been checked whether the applied formulae and methods for calculating baseline emissions are in accordance with the monitoring plan and the approved methodology. • <i>Completeness</i>: It has been checked whether all calculations are complete and without omissions. <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /XLS/ • /SCADA/ • /PDD/. <p>As per PDD and applicable methodology the calculation has been done as follow:</p> $ER_y = BE_y - PE_y - LE_y$ <p>Where ER_y Emission reductions in year y (tCO₂e) BE_y Baseline emissions in year y (tCO₂e)</p>	
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	<p> PE_y Project emissions in year y (tCO₂) LE_y Leakage emissions in year y (tCO₂) </p> <p>As per registered PDD and Paragraph 33, AMS-I.C version 20, the baseline emissions are calculated as:</p> $BE_y = BE_{thermal,CO_2,y} = (EG_{thermal,y} / \eta_{BL,thermal}) \cdot EF_{FF,CO_2}$ $= 149,415 \text{ tCO}_2e$ <p>Where:</p> <p> $BE_{thermal,CO_2,y}$ The baseline emissions from thermal energy displaced by the project activity during the year y (tCO₂) $EG_{thermal,y}$ The net quantity of thermal energy supplied by the project activity during the year y (TJ). <i>Calculated based on the difference in enthalpy and the amount of steam supplied (see below)</i> EF_{FF,CO_2} The CO₂ emission factor of the fossil fuel that would have been used in the baseline plant obtained from reliable local or national data if available, alternatively, IPCC default emission factors can be used (tCO₂/TJ). <i>Although coal is the baseline fuel, the methodology requires use of the pre-project fuel's emission factor (in this case, bunker) if the latter is more conservative than the former (discussed below).</i> $\eta_{BL,thermal}$ The efficiency of the plant using fossil fuel that would have been used in the absence of the project activity. <i>Manufacturer value is used as discussed below</i> </p> <p>As per page 27 of the methodology, the thermal energy is calculated as:</p> $EG_{thermal,y} = F_{ss,y} \cdot (h_g - h_f)$ $= 1,505.73 \text{ TJ}$ <p>Where:</p> <p> $F_{ss,y}$ Steam flow from the biomass boiler in the period y (t/period) h_g Enthalpy of the saturated steam leaving boiler (in TJ/t) h_f Enthalpy of the liquid entering boiler (in TJ/t) </p> <p>For the energy consistency check, the same formula is applied, but substituting $EG_{thermal,y}$ by the calculated value based on dry biomass an biomass energy emission factors:</p> $BE_{thermal,CO_2,y} = (EG_{thermal,y} / \eta_{BL,thermal}) \cdot EF_{FF,CO_2}$ <p>The calculation can be checked in excel sheet Energy Balance where the Energy $EG_{thermal,y}$ as per steam flow meter equals 1,505.73 TJ whereas the energy as per energetic content in biomass equals 1,633.08 TJ, being the actual monitored value 8% minor. The Boiler efficiency as per PDD and ex-ante ER calculation was considered 70%.</p>						
Findings	<table border="1"> <tr> <td data-bbox="459 1473 523 1816"> <input type="checkbox"/> </td> <td data-bbox="531 1473 1444 1816"> <p>The calculation of the baseline emissions was found to be fully compliant with the above stated principles.</p> <p>The calculations of baseline GHG emissions or baseline net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values, GWPs and other reference values have been correctly applied.</p> <p>No errors, miscalculations, omissions, misstatements or incomplete information has been identified.</p> </td> </tr> <tr> <td data-bbox="459 1816 523 1883"> <input checked="" type="checkbox"/> </td> <td data-bbox="531 1816 1444 1883"> <p>The verification team has identified mistakes in the baseline emissions calculation or the underlying calculation approaches.</p> </td> </tr> <tr> <td data-bbox="459 1883 523 1962"> <input checked="" type="checkbox"/> </td> <td data-bbox="531 1883 1444 1962"> <p>In this context the following CARs, CLs, FARs have been raised:</p> <p>CAR 07, CAR 13, CAR 14</p> </td> </tr> </table>	<input type="checkbox"/>	<p>The calculation of the baseline emissions was found to be fully compliant with the above stated principles.</p> <p>The calculations of baseline GHG emissions or baseline net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values, GWPs and other reference values have been correctly applied.</p> <p>No errors, miscalculations, omissions, misstatements or incomplete information has been identified.</p>	<input checked="" type="checkbox"/>	<p>The verification team has identified mistakes in the baseline emissions calculation or the underlying calculation approaches.</p>	<input checked="" type="checkbox"/>	<p>In this context the following CARs, CLs, FARs have been raised:</p> <p>CAR 07, CAR 13, CAR 14</p>
<input type="checkbox"/>	<p>The calculation of the baseline emissions was found to be fully compliant with the above stated principles.</p> <p>The calculations of baseline GHG emissions or baseline net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values, GWPs and other reference values have been correctly applied.</p> <p>No errors, miscalculations, omissions, misstatements or incomplete information has been identified.</p>						
<input checked="" type="checkbox"/>	<p>The verification team has identified mistakes in the baseline emissions calculation or the underlying calculation approaches.</p>						
<input checked="" type="checkbox"/>	<p>In this context the following CARs, CLs, FARs have been raised:</p> <p>CAR 07, CAR 13, CAR 14</p>						
Conclusion	<table border="1"> <tr> <td data-bbox="459 1962 523 2033"> <input type="checkbox"/> </td> <td data-bbox="531 1962 1444 2033"> <p>No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.</p> </td> </tr> </table>	<input type="checkbox"/>	<p>No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.</p>				
<input type="checkbox"/>	<p>No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.</p>						

	<div style="border: 1px solid black; padding: 5px;"> <input checked="" type="checkbox"/> The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4. </div> <p>The baseline emissions calculation was prepared by the PPs and presented to the verification team. All calculation methods were addressed appropriately as per PDD and applicable methodology and tools, so that it can be confirmed that the baseline calculation is overall correct.</p> <p>Furthermore, as stated in the applicable methodology a consistency check was done to confirm the correctness of the energy measured by the steam meter. It is concluded that the thermal energy measured by the steam meter is conservative as it results 8% lower than the energy calculated by the biomass/moisture method. (see sheet /Energy Balance/ in spreadsheet Data_version 3).</p>
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E.8.2. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks

Means of verification	<p>During the verification the calculation of project GHG emissions has been checked. In detail the following has been verified:</p> <ul style="list-style-type: none"> • Transparency: It has been checked whether the calculation of project emissions is fully traceable and, where used, the Excel calculation provides all calculation formulae. • Parameter consistency: It has been checked whether all internal and external parameters and data used for the calculation are applied consistently in the monitoring report and the calculation spreadsheet. • Correctness: It has been checked whether the applied formulae and methods for calculating project emissions are in accordance with the monitoring plan and the approved methodology. • Completeness: It has been checked whether all calculations are complete and without omissions. <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /XLS/ • /LOG/ • /PDD/ <p>The PE calculation has been done as follow:</p> $PE_y = PE_{FF,j,y} + PE_{EC,y}$ $= PE_{EC,y}$ $= 2,417 \text{ tCO}_2\text{e}$ <p>Where</p> <p>PE_y Project emissions from the project activity during the year y (tCO₂/period)</p> <p>$PE_{FF,j,y}$ Project emissions from fossil fuel consumption during year y (tCO₂/period); no fuel consumption takes place in the project scenario.</p> <p>$PE_{EC,y}$ Project emissions from electricity consumption in period y (tCO₂/period)</p> $PE_{EC,y} = \sum_j EC_{PJ,j,y} \cdot EF_{EL,j,y} \cdot (1 + TDL_{j,y})$ <p>Where:</p> <p>$PE_{EC,y}$ Project emissions from electricity consumption in year y (tCO₂/yr)</p> <p>$EC_{PJ,j,y}$ Quantity of electricity consumed by the project electricity consumption source j in period y (MWh/yr)³;</p> <p>$EF_{EL,j,y}$ Emission factor for electricity generation for source j in year y (tCO₂/MWh)⁴</p> <p>$TDL_{j,y}$ Average technical transmission and distribution losses for providing electricity to source j in year y</p> <ul style="list-style-type: none"> • The GHG emissions from the bulldozer are not included in the calculations as they are negligible. Historic bulldozer emissions from previous MP were reviewed.
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³ The only process in this case is the operation of the biomass boiler.

⁴ Calculated according to the "Tool to calculate the emission factor for an electricity system"; details provided in the PDD's Annex.

Findings	<input checked="" type="checkbox"/>	<p>The calculation of the project emissions was found to be fully compliant with the above stated principles.</p> <p>The calculations of project GHG emissions or actual net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values, GWPs and other reference values have been correctly applied.</p> <p>No errors, miscalculations, omissions, misstatements or incomplete information have been identified.</p>
	<input type="checkbox"/>	The verification team has identified mistakes in the project emissions calculation or the underlying calculation approaches.
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:
Conclusion	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.

E.8.3. Calculation of leakage GHG emissions

Means of verification	<p>During the verification it has been checked whether leakage emissions have to be considered and, in cases where leakage emissions have to be calculated, the respective calculation of leakage GHG emissions has been checked. In such cases the same verification principles have been considered as for the baseline and project emissions calculation. Please refer to E.8.1 and E.8.2.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /XLS/ • /LOG/ • /GPS/ <p>The calculation has been performed as:</p> $LE_y = LE_{TR,y} = \sum_f D_{f,y} \cdot FR_{f,y} \cdot EF_{CO_2,f} \cdot 10^{-6}, \text{ in case } D_{f,y} > 200 \text{ km};$ <p>Or</p> $LE_y = 0, \text{ in case } D_{f,y} \leq 200 \text{ km}$ <p>$LE_y = 10,593 \text{ tCO}_2\text{e}$</p> <p>Where:</p> <p>$LE_{TR,y}$ Leakage emissions from transportation of freight monitoring period y (tCO₂);</p> <p>$D_{f,y}$ Round trip distance between the origin and destination of freight transportation activity f in monitoring period y (km);</p> <p>$FR_{f,y}$ Total mass of freight transported in freight transportation activity f in monitoring period y (t)</p> <p>$EF_{CO_2,f}$ Default CO₂ emission factor for freight transportation activity f (gCO₂/t km); <i>default values provided by the tool</i></p> <p>f Each of the freight transportation activities conducted in the project activity and involving distances larger than 200 km in monitoring period y</p>	
Findings	<input checked="" type="checkbox"/>	No leakage emissions were to be considered ($LE = 0$).
	<input type="checkbox"/>	<p>The calculation of the leakage emissions was found to be fully compliant with the above stated principles (see 8.1 and 8.2).</p> <p>The calculations of leakage GHG emissions have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in leakage emissions calculations have been justified. Where applicable, appropriate emission</p>

		factors, IPCC default values, GWPs and other reference values have been correctly applied. No errors, miscalculations, omissions, misstatements or incomplete information have been identified.
	<input checked="" type="checkbox"/>	The verification team has identified mistakes in the project emissions calculation or the underlying calculation approaches.
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CL 01
Conclusion	<input type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
		Clarification about the application of the emission factor for heavy vehicles (129 gCO ₂ /t km) only was requested. After clarification provided in the MR it is concluded that the application of the emission factor for heavy vehicles (129 gCO ₂ /t km) only, is correct and in line with the monitoring plan and the applied methodological tool.

E.8.4. Summary calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

Means of verification	<p>The verification team has checked if the MR includes a summary table of the emission reductions calculation specifying separately</p> <ul style="list-style-type: none"> - Total baseline emissions (BE), - Total project emissions (PE), - Total leakage (LE), - Total emission reductions (ER). <p>It has been assessed whether the values are correct or need to be revised as a consequence of issues identified above.</p>	
Findings	<input checked="" type="checkbox"/>	Section E.4 of the MR includes in a summary table of the emission reductions calculation.
	<input checked="" type="checkbox"/>	The summary table specified the total baseline, project and leakage emissions as well as the total emission reductions separately.
	<input checked="" type="checkbox"/>	The values as specified in the ER summary table are correct; no issues have been identified during the verification which requires changes in the ER calculation.
	<input type="checkbox"/>	During the verification issues with impact on the ER calculation have been identified.
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:
Conclusion	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
		It is concluded that the GHG emission reductions are calculated correctly and in line the registered PDD and applicable methodology and tool.

E.8.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Means of verification	<p>The verification team has checked if the MR includes a comparison of actual values of the monitoring period with the estimations in the registered PDD. It has further checked which of the below listed cases is applicable for the calculated ER of the current monitoring period.</p>	
Findings	<input checked="" type="checkbox"/>	Case 1: The ex-ante estimated value was found to be proportionally higher than the ex-post determined value. No further action is deemed required.
	<input type="checkbox"/>	Case 2: The ex-ante estimated value fits very good to the actually monitored value. No further justification is deemed required.
	<input type="checkbox"/>	Case 3: The ex-ante estimated value was found to be proportionally lower than the ex-post determined value.

	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CAR 04
Conclusion	<input type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	<p>The ex-ante ER calculation provided in section E.5 of MR version 2 and XLS "summary ex-ante emissions" is correct and traceable.</p> <p>Furthermore, as stated in the applicable methodology a consistency check was done to confirm the correctness of the energy measured by the steam meter. It is concluded that the thermal energy measured by the steam meter is conservative as it results 8% lower than the energy calculated by the biomass/moisture method</p>	

E.8.6. Remarks on difference from estimated value in registered PDD

Means of verification	On the basis of the above comparison of actual values of the monitoring period with the estimations in the registered PDD the verification team has checked whether (in case 3) an appropriate explanation is included in the MR.	
Findings	<input checked="" type="checkbox"/>	No further justification or explanation is deemed required as actual emissions of this MP do not exceed significantly the ex-ante calculated emission reductions (applicable for case 1 and 2).
	<input type="checkbox"/>	For case 3: The PP has provided a related justification in the MR. The reasons for the increase are as follows: N/A
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:
Conclusion	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.

E.8.7. Actual GHG emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards

Means of verification	The verification team has checked chapter E.7 of the MR and the emission reduction calculation sheet /XLS/.								
Findings	<input checked="" type="checkbox"/>	The MR in section E.7 includes a summary table of the ER breakdown a) ER up to 31/12/2012 and b) ER from 01/01/2013 onwards							
	<input checked="" type="checkbox"/>	The breakdown of the ERs during the first commitment period and from 01/01/2013 onwards is as follows: <input type="checkbox"/> The ER have completely been generated during the first commitment period <input checked="" type="checkbox"/> The ERs have completely been generated from 01/01/2013 onwards, <input type="checkbox"/> The ERs have partly been generated during the first commitment period and partly from 01/01/2013 onwards.							
	<input checked="" type="checkbox"/>	The breakdown of the ERs is correct, considering the applicable guidance.							
	<table border="1"> <thead> <tr> <th></th> <th>until 31/12/2012¹⁾</th> <th>from 01/01/2013¹⁾</th> <th>Sum</th> </tr> </thead> <tbody> <tr> <td>Emission reductions [tCO_{2e}]</td> <td>0</td> <td>134,383</td> <td>134,383</td> </tr> </tbody> </table> <p>¹⁾ Both days included</p>			until 31/12/2012 ¹⁾	from 01/01/2013 ¹⁾	Sum	Emission reductions [tCO _{2e}]	0	134,383
	until 31/12/2012 ¹⁾	from 01/01/2013 ¹⁾	Sum						
Emission reductions [tCO _{2e}]	0	134,383	134,383						
Conclusion	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.							

	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
		The data provided in the MR is correct as well as the related breakdown. The calculations of GHG emission reductions or net anthropogenic GHG removals are in accordance with the project standard.

E.9. Assessment of reported sustainable development co-benefits

Means of verification	<input checked="" type="checkbox"/>	N/A – as the PP has not monitored the sustainable development co-benefits of the registered CDM project activity or not requested the DOE to verify them.
	<input type="checkbox"/>	The project participants have monitored the sustainable development co-benefits of the registered CDM project activity, and requested the DOE to verify them. The following sources of information have been used in this context: <ul style="list-style-type: none"> • /MR/ • /PDD/ • /DSD/ • /unfccc/.
Findings	<input checked="" type="checkbox"/>	N/A – as the PP has not monitored the sustainable development co-benefits of the registered CDM project activity or not requested the DOE to verify them.
	<input type="checkbox"/>	Therefore, the DOE has assessed and confirms that: (a) The monitoring has been carried out in accordance with the document for monitoring sustainable development co-benefits, if such document was developed and published on the UNFCCC CDM website in accordance with the “CDM project standard for project activities”; (b) The reported monitoring results correspond to the sustainable development co-benefits of the project activity as observed by the DOE.
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:
Conclusion	<input type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	<input checked="" type="checkbox"/>	N/A – as the PP has not monitored the sustainable development co-benefits of the registered CDM project activity or not requested the DOE to verify them.
	-	

E.10. Global stakeholder consultation

Means of verification		In accordance with the PCP the DOE has submitted the initial version of the monitoring report provided by the PP for this monitoring period to be published on the UNFCCC webpage. The following sources of information have been used in this context: <ul style="list-style-type: none"> • /MR/ • /unfccc/.
Findings	<input checked="" type="checkbox"/>	No comments have been received on the published monitoring report for this monitoring period.
	<input type="checkbox"/>	Comments have been received and the DOE has concluded that comments are related to issues outside the CDM rules and requirements. Please refer to the list provided under Conclusion of this Section below for related information.
	<input type="checkbox"/>	Comments have been received. The DOE has <ul style="list-style-type: none"> - requested further information from the submitters of the comments - informed the project participants of the comments received, and requested their feedback within a specified timeframe, - considered the input received and has assessed whether such comments are relevant to the CDM project activity, - acknowledged receipt of all submitted comments on the MR of the proposed CDM project activity,

		<ul style="list-style-type: none"> - assessed whether the comments are related to the CDM rules and requirements (if so related findings have been raised as per below), - used all possible means to determine the authenticity of the name and contact details of the individual or organization on whose behalf the comments have been submitted, - contacted the secretariat to make them publicly available (if only addressed to the DOE), - determined whether authentic and relevant comments in the global stakeholder consultation were taken into due account in the PDD of the proposed CDM project activity. 		
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised, i.e. as the DOE concludes that the comments are related to the CDM rules and requirements:		
Conclusion	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.		
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.		
	As the DOE has concluded that comments are related to issues outside the CDM rules and requirements the comments and information gathered are listed as follows:			
	Nbr.	Original comment received	Feedback by the PP	Statement by DOE
	1			
	2			
3				
4				

SECTION F. Internal quality control

Before the submission of the final verification report a technical review of the whole verification procedure was carried out. The technical reviewers are competent GHG auditors being appointed for the scope this project falls under. The technical reviewers are not considered to be part of the verification team and thus not involved in the decision making process up to the technical review.

As a result of the technical review process the verification opinion and the topic specific assessments as prepared by the verification team leader may have been confirmed or revised. Furthermore reporting improvements might have been achieved.

After the successful technical review an overall (esp. procedural) assessment of the complete verification has been carried out by a senior assessor located in the accredited premises of TÜV NORD.

After this step the submission for requesting for issuance is conducted.

SECTION G. Verification opinion

Industrial de Oleaginosas Americanas S.A (INOLASA) has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 9th periodic verification (1st of the 2nd Crediting Period) of the project: "Switching of fuel from coal to palm oil mill biomass waste residues at Industrial de Oleaginosas Americanas S.A. (INOLASA), with regard to the relevant requirements for CDM project activities. The project reduces GHG emissions due to the generation of hydro energy feed into the national grid which displaces energy from fossil fuels. This verification covers the period from 30/11/2014 to 30/11/2018 (including both days).

As a result of this verification, the verifier confirms that:

- all operations of the project are implemented and installed as planned and described in the validated project design document,
- the monitoring plan is in accordance with the applied approved CDM methodology,
- the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately,
- the monitoring system is in place and functional. The project has generated GHG emission reductions,
- the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner.

TÜV NORD JI/CDM CP further confirms that the project has achieved emission reductions in the above mentioned reporting period as stated on the title page.

SECTION H. Certification statement

As a duly accredited DOE, TÜV NORD CERT confirms that the project:

"Switching of fuel from coal to palm oil mill biomass waste residues at Industrial de Oleaginosas Americanas S.A. (INOLASA)"

registered under

UNFCCC-No. : 1314

has achieved emission reductions in accordance with all applicable requirements for registered CDM project activities during the current monitoring period

MP-No.: 9th (1st of the 2nd CP)

from: 30/11/2014

to: 30/11/2018

(including both days) as follows:

Emission reductions: 134,383 tCO_{2e}.

Queretaro, 10/01/2020




Oliver Quireza
Team leader

Appendix 1. Abbreviations

Abbreviations	Full texts
CLZ	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CO ₂	Carbon dioxide
CO _{2eq}	Carbon dioxide equivalent
CL	Clarification Request
DVerR	Draft Verification Report
EFB	Empty Fruit Bunches
EXA	Exactus ERP System
ER	Emission Reduction
ERPA	Emission Reduction Purchase Agreement
FAR	Forward Action Request
GHG	Greenhouse gas(es)
ICE	Costa Rica's Institute of Electricity - Instituto Costarricense de Electricidad
IM	Interview Memo
INOLASA	Industrial de Oleaginosas Americanas S.A.
MF	Mesocarp fibres
MP	Monitoring Plan
MR	Monitoring Report
PA	Project Activity
PDD	Project Design Document
PKS	Palm Kernel Shells
PP	Project Participant
QA/QC	Quality Assurance / Quality Control
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
VT	Verification Team
XLS	Emission Reduction Calculation Spread Sheet

Appendix 2. Competence of team members and technical reviewers



Statement of Competence
Appointment and authorization according to the procedures
of the TUV NORD JVCDM Certification Program

Mr. Raul Gonzalez Mitre

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2021-06-27
VCS / ISO 14064-2	Senior Assessor	2021-06-27


Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
13.1	Solid waste and wastewater

082 - Rev. 8, Date: 2018-08-09

082_081-VAB00-F20_2018-08-09_v08.doc

081-VAB00-F20 rev3 / 2012-10-25



Statement of Competence
Appointment and authorization according to the procedures
of the TUV NORD JVCDM Certification Program

Mr. Oliver Quireza Campos

SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor (Validation, Verification)	2021-05-28
VCS / ISO 14064-2	Lead Assessor	2021-05-28


Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.1	Thermal energy generation
1.2	Renewables
13.1	Solid waste and wastewater
13.2	Manure

337 - Rev. 5, Date: 2018-08-17

337_581-VAB00-F20_2018-08-17_v05.doc

581-VAB00-F20 rev3 / 2012-10-25



Statement of Competence
Appointment and authorization according to the procedures
of the TUV NORD JVCDM Certification Program

Ms. Christina Stöhr

SCHEME	STATUS	VALID UNTIL
CDM	Assessor (Validation, Verification) Technical Reviewer	2020-05-05
VCS / ISO 14064-2	Assessor/ Technical Reviewer	2020-05-05


Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.1	Thermal energy generation
1.2	Renewables
13.1	Solid waste and wastewater

203 - Rev. 5 Date: 2019-05-05

203_201-VAB00-F20_2019-05-05_v05.doc

081-VAB00-F20 rev3 / 2012-10-25



Statement of Competence
Appointment and authorization according to the procedures
of the TUV NORD JVCDM Certification Program

Mr. Stefan Winter

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2020-07-27
VCS	Senior Assessor (Validation, Verification) Technical Reviewer	2020-07-27

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.1	Thermal energy generation
1.2	Renewables
2.1	Energy distribution
3.1	Energy demand
4.1	Cement and lime production
4.2	Paper
5.2	Caprolactam, nitril and adipic acid
9.1	Aluminium and magnesium production
9.2	Iron, steel and Ferro-alloy production
13.1	Solid waste and wastewater
13.2	Manure

163 - Rev. 5, Date: 2017-07-20

163_081-VAB00-F20_2017-07-20_v05.doc

581-VAB00-F20 rev3 / 2012-10-25

Appendix 3. Documents reviewed or referenced

No.	Author	Reference	Title	References to the document	Provider
1.	UNFCCC	/AMS/	AMS-I.C ver. 20, "Thermal energy production with or without electricity"	https://cdm.unfccc.int/filestorage/5/6/2/562YSVP78HIG4DQ3F9JLBT0RKAMZW1/EB79_repan14_AMS-I.C_ver20.0.pdf?t=NmN8cG9vNWd4fDCbG9kuMJOKt6RE0Ke8zbTW	Other
2.	DOE	/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)		Other
3.	IPCC	/IPCC/	2006 IPCC Guidelines for National Greenhouse Gas Inventories: work book	www.ipcc-nggip.iges.or.jp	Other
4.	UNFCCC	/KP/	Kyoto Protocol (1997)	http://unfccc.int/kyoto_protocol/items/2830.php	Other
5.	UNFCCC	/MA/	Decision 3/CMP. 1 (Marrakesh – Accords)	http://cdm.unfccc.int/Reference/COPMOP/index.html	Other
6.	UNFCCC	/MRT/	Monitoring Report Form (CDM-MR-FORM), Version 7.0	https://cdm.unfccc.int/Reference/PDDsForms/index.html	Other
7.	UNFCCC	/PDD/	Project Design Document for CDM project: "Switching of fuel from coal to palm oil mill biomass waste residues at Industrial de Oleaginosas Americanas S.A. (INOLASA)" version 10, dated 2018/06/20	https://cdm.unfccc.int/filestorage/I/A/X/IAQ35Y2PZUR49EJ8CTLHWVKG76BMD/1314%20PD.D.pdf?t=a1B8cG9vZDE4fDC4vnmjJXLrZPvQGzU7e11	Other
8.	UNFCCC	/PS/	CDM Project Standard version 2.0	http://cdm.unfccc.int/Reference/Standards/index.html	Other
9.	PP	/VAL/	Validation Report for Renewal CP of the CDM project "Switching of fuel from coal to palm oil mill biomass waste residues at Industrial de Oleaginosas Americanas S.A. (INOLASA)" version 5, dated 2018-06-29.	https://cdm.unfccc.int/filestorage/G/S/U/GSUH2PFX3RZCQMV918WJ45BTN07D6O/1314%20FVR.pdf?t=UjF8cG9vZDV2fDAqXt06a0ECskhTfhhdjgu6	Other
10.	PP / DOE	/VER/	Documents of previous verifications (Monitoring report, verification report, ER calculation sheet)		Other
11.	UNFCCC	/VVS/	CDM Validation and Verification Standard 2.0	http://cdm.unfccc.int/Reference/Standards/index.html	Other
12.	UNFCCC	/GOT/	Glossary "CDM terms" (version 09.1)	https://cdm.unfccc.int/Reference/Guidelarif/glos_CDM.pdf	Other
13.	Manufacturer	/CC/	- Calibration Certificate F5249016 bby Sistemas IQ, Rosemount Mass flow transmitter, serial 0217271, record dated on 2012/09/26, Validity: 2022/09/25. - Statement of calibration and test by Schneider Electric Power Logic Meter	N/A	PP

No.	Author	Reference	Title	References to the document	Provider
			type CM3250 (serial 15000219), November 2007. Validity November 2022. (The installation date was 2007-12-19).		
14.	Manufacturer	/TECH/	<p>- Rosemount Mass flow Protocol Ref. 00809-0100-4716, Rev. HA, May 2005.</p> <p>- Letter # ELE00018824 from Emerson (Rosemount) dated on 2007/09/13 as the initial calibration certificate performed 2007/09/12.</p> <p>- Letter dated 2011/11/04 by Sistemas IQ regarding the type of steam meter installed and the calibration frequency determined by the manufacturer (10 years).</p> <p>- Letter dated 2011/05/24 by Schneider Electric regarding the calibration frequency determined by the manufacturer (15 years).</p> <p>- Installation Manual Power Logic, Serie 300, ID. 63230-400-204/A1, by Schneider Electric, February 2002</p>	N/A	PP
15.	PP	/EXA/	ExactusERP System Ver. 6.0 R2-SP1 Access route: C:\ExactusERP Source for operational data: number + origin of trucks	N/A	PP
16.	PP	/GPS/	GPS Evidence of the distance between the project activity and the biomass source, includes: odometer records and google maps.	N/A	PP
17.	Government	/LAW/	<p>Legislation applicable to the project activity:</p> <p>- Rules concerning atmospheric pollutants from boilers N° 30222-S-MINAE - "Reglamento sobre emisiones de contaminantes atmosféricos provenientes de calderas", 2011/04/27.</p> <p>- General Environment Law No. 7554 – "Ley Orgánica del ambiente", 1995/10/04.</p> <p>- Boilers Rules, Decree 26789, 2001, Labor Ministry, Costa Rica.</p>	N/A	PP
18.	Government	/LIC/	<p>Boiler Renewal Approval Num. DPAH-UASSAH-AOC-070-2017, Register Num. 1601, issued on 2018/09/10 and valid till 2023/09/10.</p> <p>Atmospheric emissions Report, 2019-02-21, stamped by Ministry of Health on 2019/02/26.</p>	N/A	PP
19.	PP	/LOG/	- Official logbooks of biomass Boilers' operation	N/A	PP

No.	Author	Reference	Title	References to the document	Provider
			<ul style="list-style-type: none"> - Data and Parameters logbooks of biomass Boilers' operation - Summary of relevant events (excel file) - Steam and electricity daily record: Tank Measures "<i>Medidas de Tanques</i>" (Document used to register manually the generation of steam and electricity consume). - Steam and electricity daily record: - Oil Inventory "<i>Inventario Proceso de Aceites</i>" (Document used to register in Excel the generation of steam and electricity consume). - Daily reports of steam and energy consumption covering the monitoring period "<i>Reporte diario de Consumo de Vapor y Consumo de Energía</i>" (Document used to resume the generation of steam and electricity consume). 		
20.	PP	/PROC/	<ul style="list-style-type: none"> - Internal Procedure of Calibration of Measurement Equipment num. MSOP-016, rev. 3. - Monitoring Procedure PV-01 "Procedimiento de Verificación del Supervisor de Parámetros en la Caldera de Biomasa", Rev. 1, 2013-11-01. - CDM-Monitoring Manual – INOLASA, Version 1.2, April 2008 	N/A	PP
21.	PP	/MR/	<p>Monitoring Report of the current Monitoring Period, versions:</p> <ul style="list-style-type: none"> -18/02/2019 – version 1 -12/04/2019 - version 2 -09/07/2019 - version 3 -10/01/2020 – version 4 	N/A	PP
22.	PP	/XLS/	<ul style="list-style-type: none"> - Emission reduction calculation spreadsheet Data_version 1, 2 and 3 -summary ex-ante emissions 	N/A	PP
23.	New Manufacturer	/NEW/	<ul style="list-style-type: none"> - Zhengzhou Proposal # 051714-45T-B, dated on 2014/07/08, signed on 2014/07/22. - Triveni Turbines Proposal #CSA1310002R2, dated on 2014-01-31. - Official logbooks of electricity generation - Triveni commissioning Minutes, from 19/12/2018. - New Boiler Approval Num. DPAH-UASSAH-AOC-308-2018, , issued on 2018/09/21 and valid till 2023/09/21 	N/A	PP
24.	Azocar	/SCALE/	<p>Monthly calibration certificates of the 3 scales Rice Like 290i S/N:</p> <ul style="list-style-type: none"> -16 48 60 00 87 -16 70 30 01 19 		

No.	Author	Reference	Title	References to the document	Provider
			<p>-17 67 30 00 49 Covering the MP from 30/11/2014 to 30/11/2018</p> <p>- Orders control Report “<i>Control de Ordenes</i>” extracted from ExactusERP System covering the monitoring period.</p> <p>Monthly reports of biomass transportation “<i>Informe General Recibo</i>” covering the monitoring period.</p> <p>Delivering receipts and invoices of trucks transporting biomass</p>		
25.	Inolasa	/Boiler/	Monthly Boiler Production Reports covering the MP from Dec 2019 to Nov 2018	N/A	PP
26.	CELEQ / Technology Institute of Costa Rica	/Moist/	<p>-Lab analysis of biomass (humidity) of PKM, CELEQ-VE-0078-2016 by CELEQ (Costa Rican University), 04/10/2016.</p> <p>Energetic balance in two drying systems of waste (Ligno-celulosicos) produced in Costa Rica, September 2012- Includes EFB</p>	N/A	PP
27.	UNFCCC	/TOOL/	-Methodological tools as per section E.5	https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-12-v1.pdf/history_view	Other

Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 3. Remaining FAR from validation and/or previous verifications

N/A

Table 4. CL from this verification

CL	01	Section no.	Spreadsheet	Date: 09/12/2019
Description of CAR				
In cell E3 of spreadsheet LE the truck emission factor for heavy vehicles (129 gCO ₂ /t km) has been applied for the whole FR _{f,y} calculation, nonetheless PDD page 23 indicates also an emission factor for light vehicles (245 gCO ₂ /t km). As the PDD indicates a limit of 26 t for light vehicles and also indicates on page 2 that the used trucks will be between 25-28 t, the PP is requested to clarify the use of the EF for heavy vehicles only. The assumptions taken have to result in a conservative LE _y calculation.				
Project participant response				Date: 18/12/2019
<p>The calculation using the truck emission factor for heavy vehicles (129 gCO₂/t Km) was correct for the following reasons:</p> <ol style="list-style-type: none"> 1. Page 2 of the PDD refers to the capacity of the Truck between 25-28 tons each. That is only the freight capacity. 2. Page 23 of the PDD indicates that "Light vehicles are vehicles with a Gross Vehicle Mass (GVM) equal or less to 26 tonnes, otherwise is considered "Heavy". The GVM is the fully-loaded vehicle (vehicle mass + mass of the load). Hence if the load capacity is between 25-28 tons, plus the weight of the truck (around 17 tons), it means the trucks will be considered "HEAVY vehicles". 				
Documentation provided by project participant				
- Evidence: Truck exit ticket 044119				
DOE assessment				Date: 18/12/2019
<p>As stated in the assessment of parameter FR_{f,y} on page 45 of the verification report, the General Receipt Report, invoices and tickets were reviewed. From the revision it could be conclude that only heavy trucks (around 17 t) plus the charge (around 25-30 t) are used for the biomass transportation. This was also confirmed in interviews with the personnel in charge of the scales. So it is concluded that the application of the emission factor for heavy vehicles (129 gCO₂/t km) only is correct and in line with the monitoring plan and the applied methodological tool.</p>				

Table 5. CAR from this verification

CAR ID	01	Section no.	B.1	Date: 20/03/2019
Description of CAR				
Description of the changes in the project activity regarding installation of a new boiler Zhengzhou and electricity generator TD Power Systems is missing.				
Project participant response				Date: 28/03/2019
The Description of the new boiler and electricity generator was added in section B.1 of MR v.2.				
Documentation provided by project participant				
MR v2				
DOE assessment				Date: 16/04/2019
<p>The description provided in section B.1 of MR v2 is in line with the technical description provided by the PP and the situation observed during the site visit.</p> <p>Finding closed</p>				

CAR	02	Section no.	D.2	Date: 21/03/2019
Description of CAR				
Description of Parameters FR _{f,y} and D _{f,y} is not precisely to the description of the PDD.				
Project participant response				Date: 28/03/2019
The Description of the parameters was corrected as per the PDD				
Documentation provided by project participant				
MR v2				

DOE assessment	Date: 15/04/2019
The description of parameters $FR_{i,y}$ and $D_{i,y}$ provided in MR version 2 is in line with the description in the registered PDD.	
Finding closed	

CAR	03	Section no.	E.2	Date: 21/03/2019
Description of CAR				
Description of Formula 4 included in the MR, slightly differs from the one stated in the PDD (page 20). Furthermore description of $PE_{FF,j,y}$ is also missing.				
Project participant response				Date: 28/03/2019
Formula 4 was corrected as per PDD. Description of $PE_{FF,j,y}$ was added.				
Documentation provided by project participant				
MR v2				
DOE assessment				Date: 15/04/2019
The formula 4 for calculation of project emissions provided MR version 2 is in line with the one in PDD and applicable methodology.				
Finding closed				

CAR	04	Section no.	E.5 & E.6	Date: 21/03/2019
Description of CAR				
Calculation of ex ante estimated tCO_{2e} (136,745) is not correct. Correction is necessary				
Project participant response				Date: 28/03/2019
Calculation of ex-ante estimated tCO_{2e} was corrected in section E.5 and E.6, however the correct estimation is 195,203 tCO_2 as per excel sheet: "Summary ex-ante emissions".				
Documentation provided by project participant				
Summary ex-ante emissions.xls MR v2				
DOE assessment				Date: 15/04/2019
The ex-ante ER calculation provided in section E.5 of MR version 2 and XLS "summary ex-ante emissions" is correct and traceable. The registered PDD has been checked against the MR and xls-file.				
Finding closed				

CAR	05	Section no.	D.2	Date: 21/03/2019
Description of CAR				
The following distances used in the ER spread sheet are not in line with values estimated ex-ante in the PDD:				
<ul style="list-style-type: none"> - Rio Escondido to Barranca has to be 1,680 instead of 1,360 km. - Guanacaste to Barranca has to be 320 instead of 294 km. 				
Project participant response				Date: 10/04/2019
The excel sheet was corrected using the values estimated ex-ante in the PDD for Rio Escondido and Guanacaste.				
Documentation provided by project participant				
Data_version 2				
DOE assessment				Date: 15/04/2019
The distances provided in Data_sheet/LE from Barranca and Guanacaste to Barranca are in line with the values provided ex-ante in the PDD. The $D_{i,j}$ determination is correct and in line the applicable tool and methodology. The registered PDD has been checked against the MR and xls-file.				
Finding closed				

CAR	06	Section no.	D.2	Date: 21/03/2019
Description of CAR				
The following distances were determined by google maps, nonetheless the distances determined by the mileage counter of the trucks as stated in the PDD were not evidenced:				
<ul style="list-style-type: none"> - AGRIALIN – 220 km - San Carlos – 272 km - Naranjo to Barranca - 274 km 				

Project participant response	28/03/2019
<p>This correspond to new distances (new sites), hence were not stated in the PDD. The mileage counter of the trucks was obtained for each trip, and an average km was obtained per distance mentioned above. The average Km were compared by using google maps. The more conservative value is being used and corrected in the Excel sheet.</p> <ul style="list-style-type: none"> - AGRIALIN – 226 - San Carlos – 296 - Naranjo – 274 	
Documentation provided by project participant	
<p>Excel: “Distancias Biomassas” Data version 2</p>	
DOE assessment	Date: 15/04/2019
<p>The manner as the trip distances has been determined is in line with the tool “Project and leakage emissions from transportation of freight” ver. 1.1, as this tool states that the distance can be determined once for each trip using the vehicle odometer or of any other appropriate sources (i.e. on-line). The VT cross checked the distances using google maps. So, the new routes distances determination method is correct and conservative. Finding closed</p>	

CAR	07	Section no.	D.2	Date: 21/03/2019
Description of CAR				
<p>The values included in monitoring table of parameter B_{Biomss,y} in MR are not correct, as the moisture was not considered in the calculation.</p>				
Project participant response				Date: 10/04/2019
<p>Values have been re-written after deducting moisture content.</p>				
Documentation provided by project participant				
MR v2				
DOE assessment				Date: 30/04/2019
<p>The revised B_{Biomss,y} values have been calculated considering the moist content and also the differences in the biomass stock, considering the initial stock at the start point of the CP and the remaining stock at the end of the CP. Such data is taken from the PivoTable DT in spreadsheet Data version 2. The values are correct and consistent in the spreadsheet and MR version 2. Finding closed</p>				

CAR	08	Section no.	B.2.5	Date: 22/05/2019
Description of CAR				
<p>The PRCs related to Monitoring plan was approved on 31/05/2011 not 21/05/2011. The corrected section in the MR is B.2.5</p>				
Project participant response				Date: 10/07/2019
<p><i>Correct, the monitoring plan was approved on 31/05/2011, this was changed in section B.2.6.</i></p>				
Documentation provided by project participant				
MR v3				
DOE assessment				Date: 14/07/2019
<p>The corrected PRC approval date is consistent with the date on the UNFCCC website. Finding closed</p>				

CAR	09	Section no.	B.2	Date: 22/05/2019
Description of CAR				
<p>Page 1 of MR:</p> <ol style="list-style-type: none"> a. as per UNFCCC project page, Vattenfall is still PP, however it is missing in the MR. Explanation is requested. b. MP number: it is reasonable to also state that it is the 9th period, as the guideline to fill the MR states it is “....an ordinal number referring to the chronological order of monitoring periods...”. c. Amount of GHG ERy: As per guideline to fill the MR only the “Amount of GHG emission reductions ... for this monitoring period...” is requested. The ERy estimated per year is not necessary to state. 				
Project participant response				Date: 10/07/2019
<ol style="list-style-type: none"> a. <i>In the new approved PDD, Vattenfall is no longer a project participant.</i> b. <i>Added</i> c. <i>The annual expected reduction was deleted.</i> 				

Documentation provided by project participant	
MR ver. 3	
DOE assessment	Date: 14/07/2019
<ul style="list-style-type: none"> a. The PP provided a signed MOC by Vattenfall representative, indicating Inolasa as the only authorizer PP for all CERs topics. b. The consecutive MP has been added in the front page as per MR guideline. c. The total ER stated in the front page is correct and consistent with the ER calculation sheet. 	
Finding closed	

CAR	10	Section no.	B.2	Date: 22/05/2019
Description of CAR				
Section B: table 2:				
<ul style="list-style-type: none"> a. the boiler working pressure differs from the registered PDD. b. the fuel to be used, differs from the registered PDD. 				
Project participant response				Date: 10/07/2019
<ul style="list-style-type: none"> a. <i>This was mistakenly stated, it was corrected in version 3 of the MR.</i> b. <i>The registered PDD (version 10) mainly foresees the use of palm kernel shells (PKS), empty fruit branches (EFB), cane bagasse and wood chips (see e.g. Table 3 in the PDD). Although these are the expected biomasses for this project, availability issues may trigger variations in the plant's biomass profile (see e.g. sections A.3 on page 5). A new type of biomass (palm kernel meal) has been used in this monitoring period, representing 0.96% of total biomass usage (in terms of weight; 1.12% in terms of energy)⁵. Although in the absence of the project this biomass was left to decay, for conservativeness a potential leakage effect has been accounted for in accordance with paragraph 18 of the General Guidance on Leakage in Biomass Project Activities (Version 03)⁶. This potential leakage source adds to 2,020 tCO₂, which represent less than 2% of baseline emissions claimed during this period. Moreover, a new source of bagasse (i.e. the Central Azucarera Tempisque SA ("CATSA), a sugar mill located in Liberia, Guanacaste province) has been added in this monitoring period. As per footnote 10 in the PDD (p. 2), if additional sources of bagasse are contemplated, the project participant will provide evidence of the fate of this biomass in the absence of the project. A letter has been requested to the bagasse provider, where they state that this biomass constitutes waste that has no alternative use for the company. A copy of this letter is provided.</i> 				

Documentation provided by project participant	
Ingenio Catsa.pdf	
DOE assessment	Date: 14/07/2019
<ul style="list-style-type: none"> a. The work pressure of the boiler in the MR is consistent with the one indicated in the PDD b. The clarification provided by the PP is in line with the approved PRC-1314-002, which considers the change of biomass types though the CP, depending on the availability. The biomass types amounts mentioned in Table 2 are consistent with the amount verified in spreadsheet data-version 3. Furthermore the new source of bagasse used during this MP is confirmed by an official letter from the sugar mill CATSA. 	
Finding closed	

CAR	11	Section no.	B.2	Date: 22/05/2019
Description of CAR				
<ul style="list-style-type: none"> a. Section C: the PDD states another element (page 31), which is not mentioned in the MR. "Internal auditing" b. Section D.1, parameter EF_{EL,j,y}: as per registered PDD the applied tool version is version 6 – that's inconsistent. c. Section D.2, parameter Moisture: it is mentioned that the parameter is used to evaluate the overall consistency of energy measurements. Specify the spreadsheet where that is found. 				
Project participant response				Date: 10/07/2019

⁵ These figures are readily available in the energy balance prepared for this monitoring report (see cells G21 and L19 in the "Energy Balance" tab, file: *data_version 2.xlsx*).

⁶ As indicated by the methodology (paragraph 79 in AMS-I.C ver 20). Note that the General Guidance does not provide a specific equation for the estimation of this type of leakage; however, a conservative approach is provided in the large-scale equivalent of this tool (i.e. TOOL16 - Project and leakage emissions from biomass version 4, see equation 9 in paragraph 46).

- a. Internal auditing was included in the MR. v3
- b. It was corrected to version 6 in the MR. V3
- c. This is presented in row 12 ("Energy balance" tab) in the ER spreadsheet.

Documentation provided by project participant

MR ver. 3

DOE assessment**Date:** 14/07/2019

- a. The internal auditing activities performed during the MP have been included and are in line with the actual monitoring activities.
- b. The referred PDD version in section D.1 is consistent and correct (PDD ver. 6)
- c. The mentioned spreadsheet does include the consistency check of the energy calculation by two different methods.

Finding closed

CAR	12	Section no.	B.2	Date: 22/05/2019
Description of CAR				
Section E.2:				
<ul style="list-style-type: none"> a. Table 7: the parameter abbreviation EC_y differs from the MP. b. as final result of PE_y is missing in this section. 				
Project participant response				Date: 10/07/2019
<ul style="list-style-type: none"> a. Parameter abbreviation corrected b. Kindly note that $PE_y = PE_{EC,y}$ as no fossil fuels are consumed in the project scenario. This clarification was added to the revised monitoring report (see Table 7). 				
Documentation provided by project participant				
MR ver. 3				
DOE assessment				Date: 14/07/2019
<ul style="list-style-type: none"> a. The parameter $EC_{PJ,y}$ abbreviation is consistent with the PDD. b. The PE_y value is correctly stated in table 7. 				
Finding closed				

CAR	13	Section no.	Spreadsheet	Date: 22/05/2019
Description of CAR				
Spreadsheets BE:				
<ul style="list-style-type: none"> a. The MP starts on 30/11/2014, however the presented values start in December 2014. Values are missing for 30/11/2014. Explanation is requested. 				
Sheet PE:				
<ul style="list-style-type: none"> b. Cell D8: the parameter abbreviation differs from the MP. c. The source of $EC_{PJ,y}$ is not clear. Information is missing. 				
Sheet BE:				
<ul style="list-style-type: none"> d. Parameter h_g: using the referenced internet page, applying the stated pressure of saturated steam – the calculated value of h_g differs from the stated one. Please explain. e. The source of $F_{ss,y}$ is missing. f. The unit of $F_{ss,y}$ is not clear. Please explain and be sure that it is a SI-unit (metric). 				
Sheet LE:				
<ul style="list-style-type: none"> g. The final value of LE_y needs to be rounded up 				
Project participant response				Date: 10/07/2019
<ul style="list-style-type: none"> a. As some of the information involved is recorded monthly (e.g. biomass transport), emission reductions from the first day in this monitoring period are neglected and only whole months are considered. b. Corrected in the spreadsheet. c. As stated in the monitoring report, the biomass boiler's energy consumption is directly metered. Relevant details are provided in section D.2 of the monitoring report. As all relevant data, it is then exported to the dynamic table that is used for the preparation of the monitoring report. d. When using the provided link, the unit must be set to bar abs to achieve the reproduced values. e. $F_{ss,y}$ is the steam flow from the biomass boiler (see eq. (3) in the MR), and is metered in metric tons ($MT = 1000kg$). Details for the metering equipment are provided in the first box in section D.2 of the monitoring report. The results are then manually exported to the dynamic table in the excel spreadsheet submitted as part of this report. f. See previous item. The notation "MT" has been replaced to read "t". g. The final value of PE_{EC} and LE_y were rounded up in sheet "Summary" of "data_version 3" -Excel 				
Documentation provided by project participant				
MR ver. 3				
"data_version 3" -Excel				

DOE assessment		Date: 14/07/2019
<ol style="list-style-type: none"> The decision to consider the biomass negligible for one day is considered correct as it is conservative for the final ER calculation. Parameter abbreviation in cell D8 is consistent with the MR The energy $EC_{PJ,y}$ data is registered manually in daily logbook, the information is include in dynamic table (DT) and then transferred to the spreadsheet PE. The online unit's conversion tool provides consistent values. $F_{ss,y}$ monitoring values are captured in the dynamic table (DT) spreadsheet, then it is transferred spreadsheet BE. The SI-unit for parameter $F_{ss,y}$ has been used The corrected PE_{EC} and LE_y were rounded up and the baseline emissions were rounded down, so the final ER calculation is conservative. 		
Finding closed		

CAR	14	Section no.	Spreadsheet/MR	Date: 09/12/2019
Description of CAR				
The project activity boiler efficiency is indicated as 80% (PDD, page 6), whereas 64.55% (energy balance workbook, Cell C2) and footnote on page of 16 of MR 70%. Correction and clarification is requested.				
Project participant response				Date: 18/12/2019
<ol style="list-style-type: none"> The technical design specifications stated the overall efficiency of 80%, however in footnote 2 it was stated since the PDD that during actual implementation, and considering that a different biomass mix was ultimately used, boiler efficiency has been less than this nominal value. 70% was assumed in the ex-ante ER calculation in the PDD (it was less conservative assumption comparing it with the actual boiler efficiency of 64.55%) 64.55% is the boiler efficiency that matches the theoretical biomass energy with the measured thermal energy, which is less than the efficiency foreseen in the PDD (as explained above) for given calorific values and humidity contents. This reduced efficiency partly explains the reduction in claimed ERs and hence the calculation is more conservative. <p>If in the excel sheet "energy balance workbook" Cell C2 is changed assuming the same efficiency as the one used in the ex-ante calculation 70%, the energy content (TJ) will be of 1,633.08 TJ that will be 8% higher than the measured value of 1,505.73 TJ. The measured value is more conservative. This explanation does not affect any of the ER calculations.</p>				
Documentation provided by project participant				
ER spreadsheet version 2.1				
DOE assessment				Date: 10/01/2020
<p>The boiler efficiency of 70% was applied to be consistent with the efficiency assumed, during validation, as per ER ex-ante calculation. The PDD and ex-ante ER calculation have been checked against the MR and the final ER calculation.</p> <p>As stated on page 17 of the verification report, the energy estimated by the biomass calorific values (1,633 TJ) is around 8% higher than the actual energy measured by the steam flow meter (1,505 TJ). It is important to notice that the boiler efficiency applied for the calculation of the value 1,633 TJ is 70%.</p> <p>As clarified by the PP in order to know the actual boiler efficiency, the efficiency in cell C2 of the spreadsheet was moved to find out the match with the measured value of 1,505.73 TJ, which results in an efficiency of 64.55%. The boiler efficiency of 70% and the annual energy content of 1,633 TJ have been confirmed in the revised energy balance sheet. So it is confirmed that the assumed efficiency value of 70% as per ex ante calculation is conservative and real.</p>				

Table 6. FAR from this verification

FAR	01	Section no.	B.1	Date: 21/03/2019
Description of CAR				
<p>During site visit, it was observed that a new installation of a boiler type Zhengzhou (SN 4T02-1401) with a capacity of 45t/h and steam temperature of 350 °C (reference: Proposal from Zhengzhou #051714-45T-B, page 11, dated on 2014/07/08, signed on 2014/07/22) and a new installation of electricity generator TD Power Systems – Toyo Denki (Turbine SN TST-2060-158) with a capacity of 4000 kW (reference: Proposal from Triveni Turbines #CSA1310002R2, page 17 dated on 2014-01-31).</p>				

According to official logbook of electricity generation and Triveni commissioning Minutes, the new equipment started full operation on 18/12/2018. Hence the current monitoring period is not affected by the change in design of the registered project activity. This has been evidenced during site visit. The verification team has checked related evidence and interviews were performed.

Concluding that a Post Registration Changes shall be prepared/approved before submission of the next monitoring period.

Project participant response	Date: DD/MM/YYYY
Documentation provided by project participant	
DOE assessment	Date: DD/MM/YYYY

Appendix 5. Monitored Parameters

Table A-5: Periodic Verification

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
A. EG_{thermal,y}		Net quantity of thermal energy supplied by the project activity during the period <i>y</i>		
<p>a) Measurement / Determination method (VVS, §§ 360-364) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</p>	MR/ /CC/ /PDD/ /TECH/ /LOG/ /XLS/ /AMS//	<p><i>Description:</i> As per PDD for metering the steam data, the plant has one flow meter and its control, which register the data continually and also register the accumulated data, and every year (on December 31) the control reset automatically to zero. The measured data is registered in a logbook called "Tanks measurements". Such accumulated values are recorded on the annual xls spread sheets. Also, the information is saved digitally on the SCADA system with backup purposes.</p> <p>The mass flow accuracy of the mass flow meter is 1.0 over 10:1 flow range. The accuracy of the pressure meter is ±1% of calibrated span. All applicable QA/QC procedures are met.</p> <p>The manufacturer technical specification states that the flow meter high performance is guaranteed for an operation period of 12 years, and calibration frequency of 10 years. As per manufacturer calibration report the meter was originally calibrated on 12/09/2007 and on 26/09/2012.</p> <p>The steam meter was calibrated as per manufacturer recommendation. The calibration interval of the steam meter is valid for 10 years, according to manufacturer specifications. However, additionally to the monitoring activities stated in the PDD, the steam meter is verified by a third party frequently in order to ensure the proper operation, although is not mandatory as per PDD, as this is an important parameter for the company.</p> <p>As stated in the PDD (parameters "B_{Biomass,y} and Moisture content of the biomass") the consistency of the parameter EG_{thermal,y} is compared vs. the energy estimation calculated by formula 14 of the applicable methodology.</p> <p>In case of any failure (i.e. an accident) happens, the meter has to be replaced immediately.</p> <p>The operation safety of the steam generator was carried out by an officially authorized boiler inspector.</p>	OK	OK

		<p><i>Verifier's action:</i></p> <ul style="list-style-type: none"> ➤ The verifier physically confirm the existence of the steam flow meter, checked the respective serial numbers and logbooks "Tanks measurements" that ensure the proper functioning. ➤ The VT reviewed the manufacturer's specifications and user's guide. ➤ The VT reviewed the calibration certificate, which is still valid for the current MP. ➤ The VT reviewed the verification reports provided by the 3rd party inspector to ensure the meter is working properly. No malfunction was identified. ➤ As no second meter (or backup meters) is available the VT analysed the energy, baseline, project emissions and leakage emissions and ER in graphs in order to identify possible atypical energy measurements during the MP. No atypical data was identified which could lead to a non-conservative ER calculation. Also, as stated in section "Data/Parameter table 10" of the applicable methodology AMS-I.C version 20. The consistency of the ER calculated based on energy output is cross check against the energy estimation based on the utilized biomass as per formula 14. XLS sheet Energy Balance was reviewed). The actual energy calculation is considerably lower than the calculation done by the formula 14, so the energy measurements are considered correct and conservative. ➤ Check the Monitoring Room and checked the daily raw data from logbooks and SCADA of the whole monitoring period. ➤ The obtained daily data was corroborated to be the same in the MR and calculation spreadsheet. ➤ Finally, data was cross-checked against the ER spread sheet to ensure the traceability of the data. 		
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		<p><i>Conclusion:</i> By means of the above the verification team could confirm that:</p> <ul style="list-style-type: none"> - The measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology. - The metering equipment complies with the PDD requirements. - Frequency of measurements are as per requirements in the PDD. - The monitored energy data is consistent and conservative. - Equipment was not changed or replaced during the monitoring period. <p>The meter is state of the art and was properly verified by an external and independent body, therefore there is no significant inaccuracy expected for this parameter. All applicable QA/QC procedures as per PDD are met.</p>			
<p>b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 365-371) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i> <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i> <i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6.</i></p>	/ MR / / CC / / PDD / / TECH / / LOG / / XLS / / AMS /	<input checked="" type="checkbox"/>	It is confirmed that the accuracy of the equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan	OK	OK
		<input checked="" type="checkbox"/>	For details regarding the accuracy and calibration details please refer to Appendix 6		
		<input checked="" type="checkbox"/>	No delayed calibration has occurred		
		<input checked="" type="checkbox"/>	As per the initial assessment the monitored value is deemed to be correct.		
		<input checked="" type="checkbox"/>	Based on calibration certificates checked it can be confirmed that the monitoring equipment has been duly calibrated for this entire monitoring period.		
		<input type="checkbox"/>	Based on calibration certificates checked a delay in calibration has been identified for the following period: Start date of delay: End date of delay: For both meters, the main and backup		
<input type="checkbox"/>	A delay in calibration has been identified, the PP applied related actions and therefore the DOE can confirm that the:				

		<input type="checkbox"/> The maximum permissible error of the instrument has been applied to the values during the period between scheduled date of calibration and the actual date of calibration <input type="checkbox"/> The result of the delayed calibration did not identify an error beyond the maximum permissible error of the instrument <input type="checkbox"/> The error as identified during the delayed calibration has been applied as the error is beyond the maximum permissible error of the instrument <input type="checkbox"/> The error has been applied in a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed GHG emission reductions or net anthropogenic GHG removals <input type="checkbox"/> The error has been applied all measured values taken during the period between the scheduled date of calibration and the actual date of calibration.		
		<input type="checkbox"/> In this context the following findings have been raised: <input type="checkbox"/> N/A <input type="checkbox"/>		
B. EC_{PJ,j,y}		Quantity of electricity consumed by the project electricity consumption source <i>j</i> in period <i>y</i>		
a) Measurement / Determination method (VVS, §§ 360-364) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.	/MR/ /CC/ /PDD/ /TECH/ /LOG/ /XLS/ /AMS/ /TOOL/	Description: As per PDD the electricity consumption is measured continuously by an electricity meter located in the room called substation 2 and registered manually in the daily logbook "Tanks measurements", then the data is registered on the annual xls spread sheet. As per technical manufacturer data the meter works properly for a period of 15 years while it works under typical operating conditions. As the PP take into consideration that the meter is high tech, it doesn't consider necessary any backup solution in case of failure of the equipment. In case of any failure (i.e. an accident) happens, the meter has to be replaced immediately.	OK	OK

<p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>		<p><i>Verifier's action:</i></p> <ul style="list-style-type: none"> ➤ The verifier physically confirms the existence of the meter, checked the respective serial numbers and the correct functioning through the operation logbook. ➤ The VT reviewed the manufacturer's specifications and user's guide. ➤ Checked the daily logbooks and the annual xls spread sheets for the whole monitoring period. ➤ The obtained monthly information was corroborated to be the annual xls files and the MR and ER calculation spreadsheet. <p><i>Conclusion:</i> By means of the above the verification team could confirm that:</p> <ul style="list-style-type: none"> - Measurement method is in accordance with the registered PDD and applied methodology - The metering equipment complies with the PDD requirements. - Frequency of measurements are as per requirements in the PDD - No relevant discrepancies exist between the daily logbooks and the xls annual sheets. - Equipment was not changed or replaced during the monitoring period. <p>The measurement of the parameter is in line with the registered monitoring plan and the applied methodology.</p> <table border="1" data-bbox="1037 1026 1856 1169"> <tr> <td data-bbox="1037 1026 1106 1075"><input type="checkbox"/></td> <td data-bbox="1106 1026 1856 1075">In this context the following findings have been raised:</td> </tr> <tr> <td data-bbox="1037 1075 1106 1125"><input type="checkbox"/></td> <td data-bbox="1106 1075 1856 1125">N/A</td> </tr> <tr> <td data-bbox="1037 1125 1106 1169"><input type="checkbox"/></td> <td data-bbox="1106 1125 1856 1169"></td> </tr> </table>	<input type="checkbox"/>	In this context the following findings have been raised:	<input type="checkbox"/>	N/A	<input type="checkbox"/>			
<input type="checkbox"/>	In this context the following findings have been raised:									
<input type="checkbox"/>	N/A									
<input type="checkbox"/>										
<p>b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 365-371) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions</i></p>	<p>/MR/ /CC/ /PDD/ /TECH/ /LOG/ /XLS/ /AMS/</p>	<table border="1"> <tr> <td data-bbox="1037 1169 1106 1283"><input checked="" type="checkbox"/></td> <td data-bbox="1106 1169 1856 1283">It is confirmed that the accuracy of the equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan</td> </tr> <tr> <td data-bbox="1037 1283 1106 1362"><input checked="" type="checkbox"/></td> <td data-bbox="1106 1283 1856 1362">For details regarding the accuracy and calibration details please refer to Appendix 6</td> </tr> <tr> <td data-bbox="1037 1362 1106 1409"><input checked="" type="checkbox"/></td> <td data-bbox="1106 1362 1856 1409">No delayed calibration has occurred</td> </tr> </table>	<input checked="" type="checkbox"/>	It is confirmed that the accuracy of the equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan	<input checked="" type="checkbox"/>	For details regarding the accuracy and calibration details please refer to Appendix 6	<input checked="" type="checkbox"/>	No delayed calibration has occurred	OK	OK
<input checked="" type="checkbox"/>	It is confirmed that the accuracy of the equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan									
<input checked="" type="checkbox"/>	For details regarding the accuracy and calibration details please refer to Appendix 6									
<input checked="" type="checkbox"/>	No delayed calibration has occurred									

<p><i>theoretically possible have been made for calculating ERs.</i></p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i></p> <p><i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6.</i></p>	/TOOL/	<input checked="" type="checkbox"/>	As per the initial assessment the monitored value is deemed to be correct.			
<input checked="" type="checkbox"/>			Based on calibration certificates checked it can be confirmed that the monitoring equipment has been duly calibrated for this entire monitoring period.			
<input type="checkbox"/>		Based on calibration certificates checked a delay in calibration has been identified for the following period: Start date of delay: End date of delay: For both meters, the main and backup				
<input type="checkbox"/>		A delay in calibration has been identified, the PP applied related actions and therefore the DOE can confirm that the:				
		<input type="checkbox"/>	The maximum permissible error of the instrument has been applied to the values during the period between scheduled date of calibration and the actual date of calibration			
		<input type="checkbox"/>	The result of the delayed calibration did not identify an error beyond the maximum permissible error of the instrument			
		<input type="checkbox"/>	The error as identified during the delayed calibration has been applied as the error is beyond the maximum permissible error of the instrument			
		<input type="checkbox"/>	The error has been applied in a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed GHG emission reductions or net anthropogenic GHG removals			
<input type="checkbox"/>	In this context the following findings have been raised:					
	<input type="checkbox"/>	N/A				
	<input type="checkbox"/>					
C. FR_y		Total mass of freight transported in freight transportation activity <i>f</i> in monitoring period <i>y</i>				

<p>a) Measurement / Determination method (VVS, §§ 360-364)</p> <p><i>Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>	<p>/MR/ /SCALE/ /PDD/ /LOG/ /XLS/ /TOOL/ /AMS/ /EXA/</p>	<p><i>Description:</i> This parameter is meant to calculate the LEy emissions, so the most important monitoring data is the number of trucks.</p> <p>The biomass weight is recorded to estimate the biomass energy content and cross check against the actual energy data measured by the flow meter as per parameter EG_{thermal,y}.</p> <p>So in line with the PDD the record xls spreadsheet “General Receipt Report” is kept, which includes the truck/biomass weight as per supplier scales, the biomass source, the commercial information (as invoices) and also the weight as per PP scales.</p> <p>The PP scales are very well maintained as those are used to weight their own products (such as oils and fours). The PP scales record electronically the data by the software (ExactusERP System Ver. 6.0 R2-SP1).</p> <p>The logistics personnel do a cross check between both scales (Supplier and PP) weights in order to ensure a fair invoicing from the supplier. The invoices and receipts files are controlled by logistic and finances personnel.</p> <p>The 5 following biomass types are considered in this monitoring period:</p> <ol style="list-style-type: none"> 1. Cascara de Coquito – PK shells 2. Bagazo de caña – Cane bagasse 3. Chips de madera – Wood chips 4. Fibra de Pinzote – Empty fruit bunches 5. Harina de coquito de palma - Palm Kernel meal <p>The PDD doesn’t state any QA/QC or calibration requirement for any metring equipment, nonetheless Inolasa has a very detailed QA/QC process because the main use of their scales is for weighing their main products (oils and flours), which have a direct revenue impact. This internal process states that the scales are calibrated every month by an accredited third party.</p> <p>The logistics personnel ensure the correct weighting process by comparing the weight between the own scales and the biomass suppliers’ scales. In case of discrepancies a root cause analysis is performed in order to find the problem.</p>	OK	OK
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		<p><i>Verifier's action:</i></p> <ul style="list-style-type: none"> ➤ Cross checked the General Receipt Report vs. the invoice/tickets hard documents as per the calculated verification sampling. (see Section D.4.2) ➤ The verifier physically confirms the existence of the scales, checked the respective serial numbers. ➤ Inspection of the scales' parts. ➤ The monthly calibration certificates for the MP have been checked. ➤ Interviewed the logistics personnel to confirm the weighting process and to confirm the size of the vehicles transporting biomass. ➤ The obtained monthly information was corroborated to be the same in the MR and ER calculation spreadsheet. <p>The PP has in place monthly calibration certificates of the 3 scales Rice Like 290i S/N: -16 48 60 00 87 -16 70 30 01 19 -17 67 30 00 49 Covering the MP from 30/11/2014 to 30/11/2018.</p> <p><i>Conclusion:</i> By means of the above the verification team could confirm that:</p> <ul style="list-style-type: none"> - Measurement method is in accordance with the registered PDD and applied methodology - The monitoring procedure complies with the PDD requirements. - Frequency of measurements are as per requirements in the PDD - No relevant discrepancies exist between the General Receipt Report and the invoice/ticket files. <p>The value given in the MR is correct and traceable. No mistakes or deviation were identified during the verification.</p>		
<input type="checkbox"/>		In this context the following findings have been raised:		

			<input type="checkbox"/> N/A		
			<input type="checkbox"/>		
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 365-371) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i> <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i> <i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6.</i>		<input type="checkbox"/>	It is confirmed that the accuracy of the equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan	OK	OK
		<input type="checkbox"/>	For details regarding the accuracy and calibration details please refer to Appendix 6		
		<input type="checkbox"/>	No delayed calibration has occurred		
		<input type="checkbox"/>	As per the initial assessment the monitored value is deemed to be correct.		
		<input checked="" type="checkbox"/>	Based on calibration certificates checked it can be confirmed that the monitoring equipment has been duly calibrated for this entire monitoring period.		
		<input type="checkbox"/>	Based on calibration certificates checked a delay in calibration has been identified for the following period: Start date of delay: End date of delay: For both meters, the main and backup		
		<input type="checkbox"/>	A delay in calibration has been identified, the PP applied related actions and therefore the DOE can confirm that the:		
		<input type="checkbox"/>	The maximum permissible error of the instrument has been applied to the values during the period between scheduled date of calibration and the actual date of calibration		
<input type="checkbox"/>	The result of the delayed calibration did not identify an error beyond the maximum permissible error of the instrument				
<input type="checkbox"/>	The error as identified during the delayed calibration has been applied as the error is beyond the maximum permissible error of the instrument				
<input type="checkbox"/>	The error has been applied in a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed GHG emission reductions or net anthropogenic GHG removals				

			<input type="checkbox"/>	The error has been applied all measured values taken during the period between the scheduled date of calibration and the actual date of calibration.		
			<input type="checkbox"/>	In this context the following findings have been raised:		
			<input type="checkbox"/>	N/A		
			<input type="checkbox"/>			
D. $D_{f,j}$			Round trip distance between the origin and destination of freight transportation activity f in monitoring period y (f in this case being only transportation of biomass to boiler)			

<p>a) Measurement / Determination method (VVS, §§ 360-364)</p> <p><i>Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>	<p>/MR/ /PDD/ /LOG/ /XLS/ /TOOL/ /AMS/ /TOOL/ /EXA/ /GPS/</p>	<p><i>Description:</i> as per methodological tool “Project and leakage emissions from transport of freight”, the distance is determined either by using the vehicle odometer or another appropriate sources such as on-line sources.</p> <p>Originally the distances set ex-ante in the PDD were determined by the representative truck’s odometers.</p> <p>Currently during this MP the distances are determined either by representative trucks odometer or by goggle maps.</p> <p>The PDD stated the following 8 distances, which were determined ex-ante:</p> <ol style="list-style-type: none"> 1. Coto 47 to Barranca: 680 km 2. Quepos to Barranca: 266 km 3. Rio Escondido to Barranca: 1,680 km 4. Puntarenas to Barranca: 22 km 5. Alajuela to Barranca: 250 km 6. Orotina to Barranca: 44 km 7. Guanacaste to Barranca: 320 km 8. Las Juntas (Abangares) to Barranca: 120 km <p>Newer distances of new routes used during the monitoring period have be determined.</p> <p>During this MP the following 6 routes are applicable, which are evidenced by the General Receipt Report and scales tickets and documents.</p> <ol style="list-style-type: none"> 1. AGRIALIN to Barranca (220 km) 2. Naranjo to Barranca (274 km) 3. San Carlos to Barranca (272 km) 4. Guanacaste to Barranca (320 km) 5. Coto to Barranca (680 km) 6. Rio Escondido to Barranca (1,680 km) <p>From those 6 routes the following 3 new routes were used:</p> <ol style="list-style-type: none"> 1. AGRIALIN to Barranca (220 km) 2. San Carlos to Barranca (272 km) 3. Naranjo to Barranca (274 km) 	<p>CAR-05 CAR-06</p>	<p>OK</p>
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		<p><i>Verifier's action:</i></p> <ul style="list-style-type: none"> ➤ The verifier reviewed the records: General Receipt Report and scales tickets and documents ➤ Interviewed the logistics personnel and perform visual inspection of the scales. ➤ Cross checked the General Receipt Report vs. the invoice/tickets hard documents as per the calculated verification sampling. ➤ The VT reviewed the trucks odometer records and google maps distances to confirm the correctness of the new routes' distances. ➤ Cross check the applied distances in the ER spread sheet vs. the distances obtained from google maps, and the distances determined by the trucks' mileage records. ➤ The obtained monthly information was corroborated to be the same in the MR and ER calculation spreadsheet. <p><i>Conclusion:</i> By means of the above the verification team could confirm that:</p> <ul style="list-style-type: none"> - Measurement method is in accordance with the registered PDD and applied methodology - Frequency of measurements are as per requirements in the PDD <p>Nonetheless the following finding have been raised:</p>								
	<input checked="" type="checkbox"/>	<table border="1"> <tr> <td colspan="2" data-bbox="1106 1018 1182 1066">In this context the following findings have been raised:</td></tr> <tr> <td data-bbox="1106 1066 1182 1286"> <input checked="" type="checkbox"/> </td><td data-bbox="1182 1066 1856 1286"> <p>CAR 05: the following distances used in the ER spread sheet are not in line with values estimates ex-ante in the PDD:</p> <ul style="list-style-type: none"> - Rio Escondido to Barranca has to be 1,680 instead of 1,360 km. - Guanacaste to Barranca has to be 320 instead of 294 km. </td></tr> <tr> <td data-bbox="1106 1286 1182 1398"> <input checked="" type="checkbox"/> </td><td data-bbox="1182 1286 1856 1398"> <p>CAR 06: the following distances were determined by google maps, nonetheless the distances determined by the mileage counter of the trucks as stated in the PDD were not evidenced:</p> </td></tr> </table>	In this context the following findings have been raised:		<input checked="" type="checkbox"/>	<p>CAR 05: the following distances used in the ER spread sheet are not in line with values estimates ex-ante in the PDD:</p> <ul style="list-style-type: none"> - Rio Escondido to Barranca has to be 1,680 instead of 1,360 km. - Guanacaste to Barranca has to be 320 instead of 294 km. 	<input checked="" type="checkbox"/>	<p>CAR 06: the following distances were determined by google maps, nonetheless the distances determined by the mileage counter of the trucks as stated in the PDD were not evidenced:</p>		
In this context the following findings have been raised:										
<input checked="" type="checkbox"/>	<p>CAR 05: the following distances used in the ER spread sheet are not in line with values estimates ex-ante in the PDD:</p> <ul style="list-style-type: none"> - Rio Escondido to Barranca has to be 1,680 instead of 1,360 km. - Guanacaste to Barranca has to be 320 instead of 294 km. 									
<input checked="" type="checkbox"/>	<p>CAR 06: the following distances were determined by google maps, nonetheless the distances determined by the mileage counter of the trucks as stated in the PDD were not evidenced:</p>									

				- AGRIALIN – 220 km - San Carlos – 272 km - Naranjo to Barranca - 274 km		
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 365-371) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i> <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i> <i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6.</i>	/MR/ /PDD/ /LOG/ /XLS/ /AMS/ /TOOL/	<input checked="" type="checkbox"/>	No measurement equipment involved in the monitoring of this parameter.	N/A	OK	
		<input type="checkbox"/>	For details regarding the accuracy and calibration details please refer to Appendix 6			
		<input type="checkbox"/>	No delayed calibration has occurred			
		<input type="checkbox"/>	As per the initial assessment the monitored value is deemed to be correct.			
		<input type="checkbox"/>	Based on calibration certificates checked it can be confirmed that the monitoring equipment has been duly calibrated for this entire monitoring period.			
		<input type="checkbox"/>	Based on calibration certificates checked a delay in calibration has been identified for the following period: Start date of delay: End date of delay: For both meters, the main and backup			
		<input type="checkbox"/>	A delay in calibration has been identified, the PP applied related actions and therefore the DOE can confirm that the:			
		<input type="checkbox"/>	The maximum permissible error of the instrument has been applied to the values during the period between scheduled date of calibration and the actual date of calibration			
<input type="checkbox"/>	The result of the delayed calibration did not identify an error beyond the maximum permissible error of the instrument					
<input type="checkbox"/>	The error as identified during the delayed calibration has been applied as the error is beyond the maximum permissible error of the instrument					
<input type="checkbox"/>	The error has been applied in a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed GHG emission reductions or net anthropogenic GHG removals					
<input type="checkbox"/>	The error has been applied all measured values taken					

				during the period between the scheduled date of calibration and the actual date of calibration.		
		<input type="checkbox"/>	In this context the following findings have been raised:			
		<input type="checkbox"/>	N/A			
		<input type="checkbox"/>				
E. Biomss,y		Mass or volume for each biomass type				
a) Measurement / Determination method (VVS, §§ 360-364) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/MR/ /PDD/ /Moist/ /XLS/ /AMS/ /TOOL/	Description: the monitoring of this parameter is not necessary for this PA as stated in PDD and applicable methodology, nonetheless it is determined for consistency purposes. As per PDD and applicable methodology the Net quantity of biomass consumed is calculated using the total monitored biomass (FR _y) adjusted by moisture and actual biomass fed to the boiler. The actual fed biomass is calculated by subtracting/adding to the total monitored biomass the actual biomass stock, which is taken from the monthly "Boiler Production Report" files, the calculation is done in the xls "dynamic table" on DT sheet of the ER calculation sheet. As this parameter is calculated, there is no specific QC/QA procedures. Verifier's action: ➤ The verifier reviewed the monthly Boiler Production Reports, the total monitored biomass (FR _y) and the ER calculation spread sheet. ➤ The VT reviewed the energy cross check done in xls sheet "Energy balance". Conclusion: By means of the above the verification team could confirm that: - Calculation method is in accordance with the registered PDD and applied methodology - It is concluded that the thermal energy measured by the steam meter is conservative as it results 8% lower than the energy calculate by the biomass/moisture method. Nonetheless the following finding has been raised:			CAR-07	OK
		<input checked="" type="checkbox"/>	In this context the following findings have been raised:			

			<input checked="" type="checkbox"/>	CAR 07: The values included in monitoring table of parameter $B_{\text{Biomss},y}$ in MR are not corrects, as the moisture was not considered in the calculation.						
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 365-371) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i> <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i> <i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6.</i>	/MR/ /PDD/ /Moist/	<input type="checkbox"/>	It is confirmed that the accuracy of the equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan		OK	OK				
		<input type="checkbox"/>	For details regarding the accuracy and calibration details please refer to Appendix 6							
		<input type="checkbox"/>	No delayed calibration has occurred							
		<input checked="" type="checkbox"/>	As per the initial assessment the monitored value is deemed to be correct.							
		<input checked="" type="checkbox"/>	Based on calibration certificates checked it can be confirmed that the monitoring equipment has been duly calibrated for this entire monitoring period.							
		<input type="checkbox"/>	Based on calibration certificates checked a delay in calibration has been identified for the following period: Start date of delay: End date of delay: For both meters, the main and backup							
		<input type="checkbox"/>	A delay in calibration has been identified, the PP applied related actions and therefore the DOE can confirm that the: <table border="1" data-bbox="1108 1002 1854 1436"> <tr> <td><input type="checkbox"/></td> <td>The maximum permissible error of the instrument has been applied to the values during the period between scheduled date of calibration and the actual date of calibration</td> </tr> <tr> <td><input type="checkbox"/></td> <td>The result of the delayed calibration did not identify an error beyond the maximum permissible error of the instrument</td> </tr> <tr> <td><input type="checkbox"/></td> <td>The error as identified during the delayed calibration has been applied as the error is beyond the maximum permissible error of the instrument</td> </tr> <tr> <td><input type="checkbox"/></td> <td>The error has been applied in a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed GHG emission reductions or net anthropogenic GHG removals</td> </tr> </table>				<input type="checkbox"/>	The maximum permissible error of the instrument has been applied to the values during the period between scheduled date of calibration and the actual date of calibration	<input type="checkbox"/>	The result of the delayed calibration did not identify an error beyond the maximum permissible error of the instrument
<input type="checkbox"/>	The maximum permissible error of the instrument has been applied to the values during the period between scheduled date of calibration and the actual date of calibration									
<input type="checkbox"/>	The result of the delayed calibration did not identify an error beyond the maximum permissible error of the instrument									
<input type="checkbox"/>	The error as identified during the delayed calibration has been applied as the error is beyond the maximum permissible error of the instrument									
<input type="checkbox"/>	The error has been applied in a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed GHG emission reductions or net anthropogenic GHG removals									

		<input type="checkbox"/>	The error has been applied all measured values taken during the period between the scheduled date of calibration and the actual date of calibration.		
		<input type="checkbox"/>	In this context the following findings have been raised:		
		<input type="checkbox"/>	N/A		
F. Moisture content of biomass		Moisture content of biomass			
a) Measurement / Determination method (VVS, §§ 360-364) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/MR/ /PDD/ /Moist/ /XLS/ /AMS/ /TOOL/	Description: the monitoring of this parameter is not necessary for this PA as stated in PDD and applicable methodology, nonetheless it is determined only for consistency purposes. As per PDD and applicable methodology the moisture content can be determined ex-ante in PDD or it can be provided by the biomass supplier if it is reliable. The following moisture contents are taken from PDD: 1. Palm kernel shells (PKS) – 17% 2. Empty Fruit Branches (EFB) – 50% 3. Wood Chips – 25% 4. Bagasse – 52% 5. Palm kernel meal (PKM) – 9% (from supplier) Verifier's action: ➤ The VT confirms the data provided in MR and XLS ➤ The VT reviewed the MR and supplier information ➤ The VT cross checked the EFB information vs the data from a serious study issued by the CELEQ, including the chemical analysis from an accredited lab of EFB and PKM. Conclusion: By means of the above the verification team could confirm that: - Determination method is in accordance with the registered PDD and applied methodology		OK	OK
		<input type="checkbox"/>	In this context the following findings have been raised:		
		<input type="checkbox"/>	N/A		
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 365-371) In case of measured (or estimated) values, check	/PDD/ /Moist/ /XLS/	<input checked="" type="checkbox"/>	No measurement equipment is involved in the monitoring of this parameter	OK	OK
		<input type="checkbox"/>	For details regarding the accuracy and calibration details		

<p><i>whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i></p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i></p> <p><i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6</i></p>			please refer to Appendix 6			
		<input type="checkbox"/>	No delayed calibration has occurred			
		<input checked="" type="checkbox"/>	As per the initial assessment the monitored value is deemed to be correct.			
		<input type="checkbox"/>	Based on calibration certificates checked it can be confirmed that the monitoring equipment has been duly calibrated for this entire monitoring period.			
		<input type="checkbox"/>	Based on calibration certificates checked a delay in calibration has been identified for the following period: Start date of delay: End date of delay: For both meters, the main and backup			
		<input type="checkbox"/>	A delay in calibration has been identified, the PP applied related actions and therefore the DOE can confirm that the:			
		<input type="checkbox"/>	The maximum permissible error of the instrument has been applied to the values during the period between scheduled date of calibration and the actual date of calibration			
		<input type="checkbox"/>	The result of the delayed calibration did not identify an error beyond the maximum permissible error of the instrument			
		<input type="checkbox"/>	The error as identified during the delayed calibration has been applied as the error is beyond the maximum permissible error of the instrument			
		<input type="checkbox"/>	The error has been applied in a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed GHG emission reductions or net anthropogenic GHG removals			
	<input type="checkbox"/>	The error has been applied all measured values taken during the period between the scheduled date of calibration and the actual date of calibration.				
	<input type="checkbox"/>	In this context the following findings have been raised:				
	<input type="checkbox"/>	N/A				

Appendix 6. Calibration dates and validity of installed monitoring equipment

Table A-6: Periodic Verification Checklist – Calibration details

Monitoring equipment	Related monitoring parameter as per applicable registered monitoring plan	Serial number	Type	Accuracy or accuracy class	Previous calibration (last calibration before start of this monitoring period)	Calibration date(s) during this monitoring period	Validity of calibration(s)	Delay in calibration: yes/no	Period of delayed calibration
Steam flow meter	EG _{thermal,y}	0217271	Rosemount 3095M	+/- 1%	26/09/2012	N/A	25/09/2022	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	From: To:
Electricity Meter	EC _{PJ,j,y}	0015000219	Power Logic, Schneider Electric CM3250	0.5	November 2007	N/A	October 2022	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	From: To:

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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	31 May 2019	Revision to: <ul style="list-style-type: none">• Ensure consistency with version 02.0 of the “CDM validation and verification standard for project activities” (CDM-EB93-A05-STAN);• Make structural and editorial improvements.
02.1	11 January 2018	Editorial revision to correct the numbering of appendices in the instructions.
02.0	31 October 2017	Revision to align with the requirements of the “CDM validation and verification standard for project activities” (version 01.0).
01.0	23 March 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: project activities, verifying and certifying		