



VERIFICATION REPORT

for the CDM Project Activity

Monte Rosa Bagasse Cogeneration Project (MRBCP)

In
Nicaragua

Report No. 01 997 9105078389
Version 03, 2014-07-30

Designated Operational Entity (DOE)

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I. Project data:

Project title:	Monte Rosa Bagasse Cogeneration Project (MRBCP)		Report No.: 01 997 9105078389	
Registration No. / Date:	0191/ 22-06-2006 (Renewal date 22/11/2010)		Current version No.: 03	
Monitoring period:	30-05-2011 — 22-08-2013		Date of current version: 2014-07-30	
Methodology:	ACM0006. version 9		Date of first issue: 2014-03-10	
Publication of MR:	The monitoring report (version 01, 20-12-2013) was published at UNFCCC website on 21-02-2014.			
Average emission reductions:	Estimated:	398,743 tCO ₂ e/yr from 30-05-2011 to 22-08-2013 including both days based on annual emission reductions as indicated in the approved revised PDD (version 04, dated 29-08-2013, second crediting period)	Verified for CP1:	123,754 tCO ₂ e/yr from 30-05-2011 to 31-12-2012 including both days
			Verified for CP2:	80,406 tCO ₂ e/yr from 01-01-2013 to 22-08-2013 including both days
GHG reducing measure/technology:	Reducing GHG emissions by substitution of power generation with fossil fuels by energy generation with biomass residues.			

Party	Project participants	Party considered a project participant	Contract party
Nicaragua (Host)	Monte Rosa S.A. (Private entity)	No	<input checked="" type="checkbox"/>
Brazil	Econergy Brasil Ltda. (Private entity)	No	<input type="checkbox"/>

II. Verification Team and Technical Reviewer:

Verification Team			Role						
Full name	Affiliation TÜV Rheinland	Appointed for Sectoral Scopes (Technical Areas)	Team leader	Acting Team Leader	Local Expert	Team Member (Auditor)	Technical Expert	Acting Tech. Expert	Trainee Auditor
Víctor Abarca	Chile	1.2; 6.1; 13.1	X						
Norberto Odobez	Argentina	1.1; 1.2; 3.1; 4.5			X		X		
Nathaly Jo (until 08/04/2014)	Brazil	Trainee							X
Marisela Reyes (from 09/04/2014)	Chile	Trainee							X

Technical Reviewer			Role		
Full name	Affiliation TÜV Rheinland	Appointed for Sectoral Scopes (Technical Areas)	Technical Reviewer	Expert to TR	Trainee TR
Walter Tang	China	1.1; 1.2; 2.1; 2.2; 3.1; 4.1; 4.3; 4.5; 13.1	X		

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

III. Verification Report:

Final approval	Released	Distribution
<input checked="" type="checkbox"/>	By: Mr. Henri Phan	<input checked="" type="checkbox"/> No distribution without permission from the Client or responsible organizational unit
Date: 2014-08-13		<input type="checkbox"/> Unrestricted distribution

Abbreviations

CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CDM PCP	Clean Development Mechanism Project Cycle Procedure
CDM PS	Clean Development Mechanism Project Standard
CDM VVS	CDM Validation and Verification Standard
CEF	Carbon Emission Factor
CER	Certified Emission Reduction(s)
CH ₄	Methane
CL	Clarification request
CO ₂	Carbon dioxide
CO _{2e}	Carbon dioxide equivalent
CP	Commitment Period
DNA	Designated National Authority
DOE	Designated Operational Entity
ENATREL	National Electricity Transmission Company
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
Lanamet	National Metrology Laboratory
MP	Monitoring Plan
MR	Monitoring Report
MRBCP	Monte Rosa Bagasse Cogeneration Project
N ₂ O	Nitrous oxide
PDD	Project Design Document
PP	Project Participant
TUV R	TUV Rheinland (China) Ltd
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation And Verification Standard

Verification opinion — summary

The verification team assigned by the DOE (TÜV Rheinland (China) Ltd.) concludes that the CDM Project Activity “Monte Rosa Bagasse Cogeneration Project (MRBCP)” in Nicaragua, as described in the revised PDD (version 04, dated 29/08/2013) approved by EB and monitoring report (version 2.1, 14/07/2014), meets all relevant requirements of the UNFCCC for CDM project activities including article 12 of the Kyoto Protocol, the modalities and procedures for CDM (Marrakesh Accords) project activities including carbon dioxide capture and storage in geological formation and the subsequent decisions by the COP/MOP and CDM Executive Board. The verification is conducted in-line with the VVS version 07.0 requirements.

Verification methodology and process

The verification has been performed as described in the VVS version 07.0 and constitutes the following steps:

- Publication of the MR on the UNFCCC website (21/02/2014)
- Desk review of the MR and the relevant documents.
- On-site assessment (26/03/2014 – 27/03/2014)
- Issuance of Verification Report

The project activity was correctly implemented according to selected monitoring methodology and monitoring plan. The monitoring equipment was installed, calibrated and maintained in a proper manner, while collected monitoring data allowed to verify the amount of achieved GHG emission reductions. The DOE therefore is pleased to issue a positive verification opinion expressed in the attached Certification statement.

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1. Introduction

The Contracting Client Organization has commissioned the DOE TÜV Rheinland (China) Ltd. to perform a verification of the CDM Project Activity “Monte Rosa Bagasse Cogeneration Project (MRBCP)” in Nicaragua (hereafter “project activity”). This report summarises the findings of the verification of the project, performed on the basis of paragraph 62 of the CDM modalities and procedures, as well as criteria given to provide for consistent project operations, monitoring and reporting and the subsequent decisions by the CDM Executive Board. Verification is required for all registered CDM project activities intending to confirm their achieved emission reductions and proceed with request for issuance of CERs. This report contains the findings from the verification and a certification statement for the certified emission reductions.

1.1 Objective

Verification is the periodic independent review and *ex post* determination of both quantitative and qualitative information by a Designated Operational Entity (DOE) of the monitored reductions in GHG emissions that have occurred as a result of the registered CDM project activity during a defined monitoring period.

Certification is the written assurance by a DOE that, during a specific period in time, a project activity achieved the emission reductions as verified.

The objective of this verification was to verify and certify emission reductions reported for the “Monte Rosa Bagasse Cogeneration Project (MRBCP)” in country ” Nicaragua ” for the period 30/05/2011 to 22/08/2013.

The purpose of verification is to review the monitoring results and verify that monitoring methodology was implemented according to monitoring plan and monitoring data, used to confirm the reductions in anthropogenic emissions by sources is sufficient, definitive and presented in a concise and transparent manner.

In particular, monitoring plan, monitoring report and the project’s compliance with relevant UNFCCC and host Party criteria are verified in order to confirm that the project has been implemented in accordance with previously registered design and conservative assumptions, as documented. And also if the monitoring plan is in compliance with the registered PDD and approved monitoring methodology.

1.2 Scope

The scope of the verification is:

- To verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.
- To verify that reported GHG emission data is sufficiently supported by evidence.
- Where sampling is involved, sampling guidelines are applied to ensure the adequate sampling and survey method is followed in reaching professional judgements.

The verification shall ensure that reported emission reductions are complete and accurate in order to be certified. The verification comprises a review of the monitoring report over the monitoring period from 30/05/2011 to 22/08/2013. Based on registered PDD in part of the monitoring parameters and monitoring plan, emission reduction calculation spreadsheet, monitoring methodology and all related evidence provided by project participants.

On-site visit and stakeholders interviews are also performed as part of the verification process.

2. Methodology

The verification consists of the following four phases:

1. Completeness check and webhost of the Monitoring report for UNFCCC public commenting;
2. Desk review of the monitoring plan, monitoring report, monitoring methodology, project design document, applicable tools in particular attention to the frequency of measurements, quality of metering equipment's including calibration requirements, QA/QC procedures and other relevant documents;
3. On-site visit (including follow-up interviews with project stakeholders, when deemed necessary). The on-site assignment includes the following;
 - An assignment of implementation and operation of project activity with respect to registered PDD or approved revised PDD;
 - Review of information flows for generating, aggregating and reporting the monitoring parameters;
 - Interview with relevant personals to determine whether the operational and data collection procedures are implemented and in accordance with monitoring plan of the PDD;
 - Cross check of information and data provided in the monitoring report with plant logbooks, inventories, purchase records or similar data sources;
 - Check of monitoring equipment's, calibration frequency and monitoring practice in-line with methodology and PDD;
 - Review of assumptions made in calculating the emission reduction;
 - Implementation of QA/QC procedure in-line with the PDD and methodology requirement.
4. Resolution of outstanding issues and the issuance of the final Verification report and Certification statement.

The following sections outline each step in more detail.

2.1 Desk review

The following table outlines the documentation reviewed during the verification:

Ref no.	Reference Document
/1/	Webhosted Monitoring report, version 01, dated 20/12/2013
/2/	Final Monitoring report, version 2.1, dated 14/07/2014
/3/	Previous Verification report, version 03, dated 30/08/2013
/4/	Revised approved PDD, registration no. 0191, dated 29/08/2013 (approved on 03/01/2014). Second crediting period. Available at: http://cdm.unfccc.int/Projects/DB/TUEV-SUED1135170073.01/view
/5/	Final PDD, version 4.1, dated 10/07/2014
/6/	Emission reduction calculation spread sheet for the 3 rd monitoring period, "Monte Rosa v2_1 CER 2014 07 07 GDP rev 2014 07 14.xlsx"
/7/	Approved monitoring methodology: ACM0006. "Consolidated methodology electricity generation from biomass residues", version 9
/8/	Standard monitoring report format issued by EB (EB 54 report, annex 34)
/9/	Clean Development Mechanism Validation and Verification Standard (version 07.0)
/10/	Clean Development Mechanism Project Cycle Procedure (version 07.0)
/11/	Clean Development Mechanism Project Standard (version 07.0)
/12/	Guidelines on the application of Materiality in Verifications (version 01.0)
/13/	Calibration certificates of Energy meters (brand: Schneider): Model ION-8300, Serial Number: PS-0407A141-01: <ul style="list-style-type: none"> - Certificate N° 0621 of 07/10/2011, issued by ENATREL (National Electricity Transmission Company) - Certificate N° 0963 of 19/06/2013, issued by ENATREL (National Electricity Transmission Company)

	<p>Company)</p> <p>Model ION-8500, Serial Number: PQ-0406A208-03:</p> <ul style="list-style-type: none"> - Certificate N° 0612 of 07/10/2011, issued by ENATREL (National Electricity Transmission Company) - Certificate N° 0966 of 19/06/2013, issued by ENATREL (National Electricity Transmission Company) <p>Model ION-8500, Serial Number: PQ-0409A042-03:</p> <ul style="list-style-type: none"> - Certificate N° 0613 of 07/10/2011, issued by ENATREL (National Electricity Transmission Company) - Certificate N° 0968 of 19/06/2013, issued by ENATREL (National Electricity Transmission Company) <p>Model ION-8600, Serial Number: PT-1112A347-01:</p> <ul style="list-style-type: none"> - Certificate N° 70052-0224-05 of 16/12/2011, issued by Schneider Electric - Certificate N° 0964 of 19/06/2013, issued by ENATREL (National Electricity Transmission Company)
/14/	<p>Calibration certificates of Auxiliary meters (brand: General Electric, model: SR750):</p> <p>Serial Number: A2712443:</p> <ul style="list-style-type: none"> - Certificate N° 0571 of 18/06/2011, issued by ENATREL (National Electricity Transmission Company) - Certificate N° 0970 of 19/06/2013, issued by ENATREL (National Electricity Transmission Company) <p>Serial Number: A2741386:</p> <ul style="list-style-type: none"> - Certificate N° 0572 of 18/06/2011, issued by ENATREL (National Electricity Transmission Company) - Certificate N° 0973 of 19/06/2013, issued by ENATREL (National Electricity Transmission Company) <p>Serial Number: B2773072:</p> <ul style="list-style-type: none"> - Certificate N° 0569 of 18/06/2011, issued by ENATREL (National Electricity Transmission Company) - Certificate N° 0971 of 19/06/2013, issued by ENATREL (National Electricity Transmission Company) <p>Serial Number: A2721893:</p> <ul style="list-style-type: none"> - Certificate N° 0570 of 18/06/2011, issued by ENATREL (National Electricity Transmission Company) <p>Serial Number: B2731267:</p> <ul style="list-style-type: none"> - Certificate dated 03/04/2013, issued by the manufacturer "General Electric" - Certificate N° 0972 of 19/06/2013, issued by ENATREL (National Electricity Transmission Company)
/15/	<p>Calibration certificates of weight standards used to internal verification of Bascules (brand: Schenk):</p> <p>Model: BX-2, Serial Number: 131246-01A-BEMPII H/D</p> <ul style="list-style-type: none"> - Certificate N° RCM-0853-11 of 19/08/2011, issued by Lanamet (National Metrology Laboratory) - Certificate N° RCM-1001-12 of 06/09/2012, issued by Lanamet (National Metrology Laboratory) <p>Model BX-4, Serial Number: 131106-01B-BXO and Serial Number: 131106-01A-BXO</p> <ul style="list-style-type: none"> - Certificate N° RCM-0855-11 of 23/08/2011, issued by Lanamet (National Metrology Laboratory) - Certificate N° RCM-0996-12 of 13/09/2012, issued by Lanamet (National Metrology Laboratory)
/16/	<p>Calibration certificates of truck scales (brand: Revuelta, model: RCC)</p> <p>Serial Number: 67815C.1408LE</p> <ul style="list-style-type: none"> - Certificate N° BRM-CC-22152/11 of 19/11/2011, issued by 'Basculas Revuelta Maza, S.A. de C.V.' - Certificate N° BRM-CC-24942/12 of 24/11/2012 issued by 'Basculas Revuelta Maza, S.A. de C.V.'

	<p>Serial Number: 67816C.1408</p> <ul style="list-style-type: none"> - Certificate N° BRM-CC-22119/11 of 19/11/2011, issued by 'Basculas Revuelta Maza, S.A. de C.V.' - Certificate N° BRM-CC-24944/12 of 24/11/2012 issued by 'Basculas Revuelta Maza, S.A. de C.V.'
/17/	<p>Calibration certificates of weight standards (brand: Troemner) used to internal verification of sensible weight scales (brand: Sartorius). Certificates issued by 'Lanamet':</p> <p>For weight scale brand Sartorius, Model: TE214S, Serial Number: 23951004</p> <ul style="list-style-type: none"> - Type: 5mg – 100 mg / SN: 27803. Calibration dates: 11/08/2011 and 30/08/2012. - Type: 200 g / SN: 64447. Calibration dates: 12/08/2011 and 31/08/2012 <p>For weight scale brand Sartorius, Model: TE3102S, Serial number: 1925059</p> <ul style="list-style-type: none"> - Type: 5mg – 100 mg / SN: 27803. Calibration dates: 11/08/2011 and 30/08/2012 - Type: 200 g / SN: 64446. Calibration dates: 12/08/2011 and 31/08/2012 - Type: 200 g / SN: 64447. Calibration dates: 12/08/2011 and 31/08/2012 - Type: 1 kg / SN: 64449. Calibration dates: 15/08/2011 and 31/08/2012 - Type: 2 kg / SN: 64451. Calibration dates: 15/08/2011 and 04/09/2012
/18/	<p>Calibration certificates of sensible weight scales (brand: Sartorius):</p> <p>Model: TE214S, Serial Number: 23951004</p> <ul style="list-style-type: none"> - Certificate N° 28547-1011 of 05/10/2011, issued by Merck S.A. - Calibration N° MC-B-0575-2012 of 26/09/2012, issued by 'Metrología Consultores S.A.' <p>Model: TE3102S, Serial number: 1925059</p> <ul style="list-style-type: none"> - Certification N° 28549-1011 of 05/10/2011, issued by Merck S.A. - Certification N° MC-B-0570-2012 of 26/09/2012, issued by 'Metrología Consultores S.A.'
/19/	<p>Calibration certificates of Calorimetric bomb (Brand: LECO, model: AC500, Serial number: 3602):</p> <ul style="list-style-type: none"> - Certificate N° CCI INBOX 008-2010 of 11/12/2010, issued by Inbox Technology and Services S.A. - Internal calibration registry of 09/12/2011, issued by Monte Rosa S.A. - Certificate N° CCI INBOX 002-2012 of 28/09/2012, issued by 'Inbox Technology and Services S.A.' - Certificate N° CCI INBOX 013-2012 of 12/12/2012, issued by 'Inbox Technology and Services S.A.'
/20/	<p>Calibration certificates of thermometer that is inside of the electric stove (Brand: Spencer, model: TE-060, Serial number: 11110814:</p> <p>Thermometer, brand: Tecnal, model: TCM 44, SN: 11-73256</p> <ul style="list-style-type: none"> - Certification N° LMC 4708-11 of 04/10/2011, issued by Contemp - Internal calibration registry N° 7-LA-R209 of 10/10/2012, issued by Monte Rosa S.A. <p>Calibrated temperature standard (brand: Thermo Fisher Scientific Inc., model: 15-007-8, SN: 80361792):</p> <ul style="list-style-type: none"> - Certification N° RCT-0959-12 of 31/08/2012, issued by Lanamet
/21/	<p>Manufacturer manuals:</p> <ul style="list-style-type: none"> - Schenk bascules (scale #1, scale #2 and scale #3) - General Electric meters - Schneider Energy meters - Spencer electric stove - Calorimeter LECO - Sartorius weight scales
/22/	<p>Calibration control registries:</p> <ul style="list-style-type: none"> - Internal verification of scale #1 (brand: Schenk, model: BX-2, Serial number: 131246-01A-BEMPII H/D). - Internal verification of scale #3 (brand: Schenk, model: BX-4, Serial number: 131106-01B-BXO) - Internal verification of scale #2 (brand: Schenk, model: BX-4, Serial number: 131106-01A-BXO) - Internal verification of Sartorius weight scales, model TE214S and TE3102S

	Logbook with the stops of Turbogenerators <ul style="list-style-type: none"> - Period 2011: 13/12/2011; 14/12/2011; 22/11/2011; 23/11/2011; 26/11/2011; 26/12/2011; 27/12/2011; 28/12/2011 - Period 2012: 18/01/2012; 21/02/2012; 16/03/2012; 18/04/2012; 17/05/2012; 18/05/2012; 23/05/2012; 15/06/2012; 19/06/2012; 11/12/2012; 18/11/2012; 30/11/2012; 09/12/2012; 10/12/2012; - Period 2013: 26/02/2013; 04/03/2013; 05/03/2013; 18/04/2013; 19/04/2013; 02/05/2013; 03/05/2013; 07/05/2013; 19/05/2013; 20/05/2013; 27/05/2013; 01/06/2013; 03/06/2013;
/23/	Internal registries of energy consumptions <ul style="list-style-type: none"> - Reports of crop season 2011 – 2012 - Reports of crop season 2012 – 2013
/24/	Daily reports of electricity generation <ul style="list-style-type: none"> - Reports of crop season 2011 – 2012 - Reports of crop season 2012 – 2013
/25/	Verification report and Calorimeter adjustment LECO
/26/	Calibration schedule for Monte Rosa laboratory equipments
/27/	QA/QC procedures: <ul style="list-style-type: none"> - Procedure for calorific value testing - Procedure for verification of bascules
/28/	Standard ASTM D5868 – 07a, Standard Test method for Gross Calorific Value of Coal and Coke.
/29/	European Standard UNE 164001:2005 EX, Method for determining of calorific value, issued by AENOR.
/30/	Daily Industrial reports for crop season 2011 – 2012 and 2012 – 2013.

2.2 On-site visit and follow-up interviews with project stakeholders

TÜV Rheinland verification team carried out an on-site visit dated from 26/03/2014 to 27/03/2014 and performed interviews with the project representatives.

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

	Date	Name	Organization	Topic
/i/	26/03/2014 – 27/03/2014	Gustavo Dorregaray	Econergy Brasil Ltda.	CDM Consultant - Emission reductions calculation - Development of the project activity
/ii/	26/03/2014	Karla Zeledón	Monte Rosa S.A.	Head of Human Resources - Competence of employees
/iii/	26/03/2014 – 27/03/2014	Roberto Álvarez	Monte Rosa S.A.	Coordinator of Steam generation - Steam generation - Bagasse storage
/iv/	26/03/2014 – 27/03/2014	César Olivar	Monte Rosa S.A.	Environmental management coordinator - Environmental issues - History and development of the project activity
/v/	26/03/2014	Remigio Rojas	Monte Rosa S.A.	Social communication coordinator
/vi/	26/03/2014 – 27/03/2014	Magda Obregón	Monte Rosa S.A.	Head of laboratory - Laboratory records - Calibration certificates for laboratory equipment
/vii/	26/03/2014 – 27/03/2014	Rodrigo Marin	Monte Rosa S.A.	Head of Automation - Metrology - Scales - Measurement points
/viii/	26/03/2014	Bernardo Chamorro	Monte Rosa S.A.	General Manager - History and development of the project activity
/ix/	26/03/2014	Milton Oconor	Monte Rosa S.A.	Energy Area - Energy generation - Boilers - Records of energy consumption - Daily reports - Auxiliary consumption
/x/	26/03/2014	Manuel Espinoza	Monte Rosa S.A.	Industrial Manager - General information of the project activity
/xi/	26/03/2014 – 27/03/2014	Carlos González	Monte Rosa S.A.	Management systems coordinator - QA/QC Procedures
/xii/	26/03/2014 – 27/03/2014	Ernesto López	Monte Rosa S.A.	Head of business management - History and development of the project activity
/xiii/	26/03/2014	Adrian Altamirano	Monte Rosa S.A.	Coordinator of Health and Safety
/xiv/	27/03/2014	Juan Estrada	Monte Rosa S.A.	Laboratory supervisor
/xv/	26/03/2014 – 27/03/2014	Daniel Soto	Monte Rosa S.A.	Business management area - History and development of the project activity
/xvi/	26/03/2014	Rafael Montaña	Monte Rosa S.A.	Power Plant operator
/xvii/	27/03/2014	Oscar Danilo	Monte Rosa S.A.	Power supervisor
/xviii/	26/03/2014	Gumercindo Palma	Monte Rosa S.A.	Laboratory supervisor
/xix/	27/03/2014	Edward Trujillo	Monte Rosa S.A.	Recording data

Verification Team along with onsite observation, objective evidence collections, data generation and recording analysis also considered the views obtained in these interviews while arriving at Verification Opinion.

2.3 Resolution of outstanding issues

The objective of this phase of the verification is to resolve any outstanding issues (issues that require further elaboration, research or expansion) which have to be clarified prior to final DOE's conclusions on the project implementation, monitoring practices and achieved emission reductions. In order to ensure transparency a verification protocol is completed for the project activity. The protocol shows in transparent manner criteria (requirements), means of verification and resulting statements on verification actual project activity against identified criteria.

The verification protocol serves the following purposes:

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

The verification protocol consists of three tables. Table 1 reflects the verification requirements and reference to the materials used to verify the project activity against those requirements, as well as means of verification, reference to Table 2 and preliminary and final opinion of the DOE on every particular requirement. Table 3 reflects the carry forward actions initiated by the verification team if the monitoring and reporting require attention and/or adjustment for the next verification period. The completed verification protocol for this project is enclosed in Appendix A to this report.

Findings during the verification can be interpreted as a non-compliance with CDM criteria or a risk to the compliance. Corrective action requests (CARs) are raised, in case:

- (a) Non-conformities with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- (b) Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
- (c) Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
- (d) Issues identified in a FAR during validation/previous verification(s) that are not been resolved by the project participant(s) to be verified during current verification.

Requests for clarification (CLs) are raised, if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

A forward action request (FAR) is raised during verification to highlight issues related to project implementation/monitoring that require review during the subsequent verification of the project activity. FARs shall not relate to the CDM requirements for issuance.

2.4 Internal quality control

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

2.5 Verification Team and Technical Reviewer

Before the assessment begins, members of the verification team are ensured to cover the technical area(s), sectoral scope(s) and relevant host country experience including local language ability for evaluating the CDM

verification activity. The qualification of the team is as per the criterias defined by the EB guidelines for qualification.

Verification Team			Type of Involvement					
Full name	Affiliation TÜV Rheinland	Appointed for Sectoral Scopes (Technical Areas)	Supervising the work	Desk review	Site Visit + Interview	Report and protocol Writing	Technical Expert Input	Reporting Support
Víctor Abarca	Chile	1.2; 6.1; 13.1	X	X	X	X		
Norberto Odobez	Argentina	1.1; 1.2; 3.1; 4.5			X		X	
Nathaly Jo (until 08/04/2014)	Brazil	Trainee			X			
Marisela Reyes (from 09/04/2014)	Chile	Trainee		X				X

Technical Reviewer			Type of Involvement		
Full name	Affiliation TÜV Rheinland	Appointed for Sectoral Scopes (Technical Areas)	Technical Reviewer	Expert to Technical Reviewer	Trainee TR
Walter Tang	China	1.1; 1.2; 2.1; 2.2; 3.1; 4.1; 4.3; 4.5; 13.1	X		

3. Verification findings

The findings of the verification are described in the following sections. The verification criteria (requirements), the means of verification and the results of verification are documented in detail in the verification protocol in Appendix A.

3.1 Project implementation

3.1.1 The implementation of the project activity

The project of Monte Rosa Bagasse Cogeneration Project (MRBCP) was registered on 22/06/2006 and the renewal date was 22/11/2010, under the approved consolidated baseline and monitoring methodology ACM0006 "Consolidated methodology for electricity generation from biomass residues" (version 9) as reflected on UNFCCC website (<http://cdm.unfccc.int/Projects/DB/TUEV-SUED1135170073.01/view>). This monitoring period, from 30/05/2011 to 22/08/2013, correspond to third periodical verification of the second crediting period of the project.

The project activity consists in the improvement of energy efficiency by retrofitting of an existing biomass residue fired power plant by retrofit. The retrofit increases the power generation capacity in the bagasse cogeneration facility at Monte Rosa. For this purpose, the project has 4 boilers and 6 turbo-generators (6 turbines plus 6 generators) operational during the current monitoring period. Noteworthy, a packing and storage system in bales was implemented on 10/12/2010 due to there is not enough free space in the courtyard to store the produced bagasse which has been growing yearly because Monte Rosa mill is increasing the sugar cane processing and baling is the cheaper process to fix the without causing any change in the bagasse quality.

Project Participants:	Monte Rosa S.A.	Econergy Brasil Ltda.
Project Parties:	Nicaragua	Brazil
Title of project activity:	Monte Rosa Bagasse Cogeneration Project (MRBCP)	
UNFCCC registration No:	UNFCCC registration No.0191	
Baseline and monitoring methodology:	ACM0006 (version 9)	
Project Type:	Renewable energy. The project activity reduces GHG emissions by displacing the fossil fuel consumption for electricity generation.	
Project Scale:	Large Scale	
Location of the project activity:	The project activity is located in the El Viejo City, in the northwest of the Nicaragua. The MRBCP is inside of the site of Monte Rosa Sugar mill.	
Project's crediting period:	01/03/2009 to 29/02/2016	
Total Duration of the project:	7 years (renewal)	
Period verified in this verification:	30/05/2011 to 22/08/2013	

As part of the site visit the verification team was able to confirm that the project implementation is in accordance with the project description contained in approved revised PDD of 29/08/2013./4/
The verification took cognizance of § 247, 248 & 249 of CDM Project Standard.

Herewith, the Verification Team summarizes *major* changes between webhosted Monitoring Report and final version of Monitoring Report for submission as follows:

Subject	Webhosted Monitoring Report (MR)	Correction to webhosted MR in the final MR submission for issuance with DOE assessment and reason of acceptance.
Consistency		
MR (project title / participants involved/ project location / reference numbers / report date and version etc.)	Project title: Monte Rosa Bagasse Cogeneration Project (MRBCP)/ Project participants: Monte Rosa S.A. (Nicaragua) and Econergy Brasil Ltda. (Brazil)/ Project location: El Viejo City in the northwest of Nicaragua/ Monitoring Report 01, dated 20/12/2013	Monitoring Report 02.1, dated 14/07/2014 /2/
Methodologies (title and version numbers) PDD and its version	ACM0006 "Consolidated methodology for electricity generation from biomass residues" (version 9)	The information remains unchanged.
CER calculations (formula applied/ amount of emission reduction)	Estimated amount in the approved revised PDD: 240,217 tCO ₂ e Actual values achieved during this monitoring period for CP1: 124,958 tCO ₂ e Actual values achieved during this monitoring period for CP2: 91,824 tCO ₂ e	Estimated amount in the approved revised PDD: 398,743 tCO ₂ e Actual values achieved during this monitoring period for CP1: 123,754 tCO ₂ e Actual values achieved during this monitoring period for CP2: 80,406 tCO ₂ e
Registration date, consistent/logical sign - off dates	Registration date: 22/06/2006 Renewal date: 22/11/2010 (second crediting period)	The information remains unchanged.
Monitoring (period dates / parameters / frequency)	3 rd Monitoring Period (of second crediting period): 30/05/2011 – 22/08/2013 (both days included). Parameters monitored:	The information remains unchanged.

	<p>EG_{project plant,y} Net quantity of electricity in the project plant during the year y Measuring frequency: Continuously</p> <p>BF_{k,y} Quantity of biomass residue type <i>k</i> combusted in the project plant during the year y Measuring frequency: Continuously</p> <p>NCV_k Net calorific value of biomass residue type <i>k</i> Measuring frequency: at least every six months, taking at least three samples for each measurement</p> <p>Moisture content of the biomass residues Moisture content in the bagasse Measuring frequency: continuously</p> <p>ξ_{el,project plant,y} Average net efficiency of electricity generation in the project plant in year y Measuring frequency: Continuously</p>	
Crediting period (type / start date)	7 years renewable/ Second crediting period from 01/03/2009 to 29/02/2016	The information remains unchanged.
<p>Please refer to Appendix A of this report for details of each change between webhosted MR and the final MR for submission. The Verification Team has carried out the verification process based on the Webhosted MR and raised CARs/CLs against the project by issuing the verification protocol.</p> <p>With the updated information and corrections done on final MR, the PP has addressed all the CARs /CLs that were raised by the Verification Team.</p> <p>It is concluded that the Verification Team has reviewed the project in line with the VVS (version 07.0) and all the evidence, corrections, justifications and updating done on the final MR with respect to CARs /CLs raised are accepted and closed by the Verification Team, issuing the positive verification opinion for project registration.</p>		

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

3.1.2 The actual operation of the CDM project activity

As accurately reported in the monitoring report for the third monitoring period (of second crediting period) from 30/05/2011 to 22/08/2013, the actual operation of the project is well organized and fully in compliance with the approved revised PDD, detailed assessment is in the following table. /2/, /4/

Project physical features (technology, project equipment, monitoring and metering equipment)	<p>The project activity consists in the improvement of energy efficiency in the Bagasse cogeneration facility at Monte Rosa sugar mill through retrofitting of an existing biomass residue fired power plant.</p> <p>The project generates electricity from biomass using the steam-Rankine cycle,</p>
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where there is a direct combustion of biomass in a boiler to generate steam which is expanded through a turbine. This cycle involves heating pressurized water which results in steam expanding to drive a turbine generator and then condensing back to water for partial or full recycling to the boiler. In some cases, the heat exchanger is used to recover heat from flue gases to preheat combustion air and a de-aerator must be used to remove dissolved oxygen from water before it enters the boiler.

The initial pressure and temperature of the steam and the pressure to which it is expanded is what determines the amount of electricity that can be generated per kilogram of steam.

The existing power plant had 3 boilers (which have an operating pressure of 13.78 bar each one) and 3 turbo-generators (which have a nominal capacity of 1.5 MW, 2.5 MW and 3 MW). The project activity involved the installation and operation of 2 boilers (which have an operating pressure of 62 bar each one) and 3 turbo-generators (which have a nominal capacity of 16.5 MW, two of 4 MW each one and two of 20 MW each one). The two existing turbo-generators of 1.5 MW and 2.5 MW were disabled and one boiler of 13.78 bar was disable too. Therefore, there are 10 equipments available to operate in this project activity (4 boilers and 6 turbo-generators).

In the current monitoring period, the project has operating 3 boilers and 4 turbo-generators (4 turbines plus 4 generators):

- Two boilers with an operating pressure of 62 bar each one (named “Caldera 6” and “Caldera 7”);
- One boiler with an operating pressure of 13.78 bar (named “Caldera 5”);
- One turbo-generator (backpressure) with a nominal capacity of 3 MW (named “Turbo Generador 3”);
- One turbo-generator (condensing-extracting) with a nominal capacity of 16.5 MW (named “Turbo Generador 1”);
- Two turbo-generators (backpressure) with a nominal capacity of 20 MW (named “Turbo Generador 8” and “Turbo Generador 7”).

This in total sums 59.5 MW of nominal capacity installed.

The bagasse produced in Monte Rosa sugar mill is used to feed the boilers and the excess is stored in the yard, from 10/12/2010 there is a packing and storage system in bales which allowed a better use of storage space than before.

The verification team confirms that the project activity were correctly implemented according to programed in the approved revised PDD. The boilers, turbines and generators installed and the monitoring equipment used coincide with the features of equipment indicated in the approved revised PDD. The correct operation of boilers, turbines, generators and monitoring equipment was verified during the site visit and the features of equipment were cross-checked through the revision of handbooks and calibration certificates. /13/, /14/, /15/, /16/, /17/, /18/, /19/, /20/, /21/, /22/

Nonetheless, 3 minor corrections were done to the approved revised PDD:

- The packing and storage system in bales was implemented on 10/12/2010 instead of 10/12/2011.
- The format of geographical coordinates was corrected.
- The values and units of parameters “ $\epsilon_{el,reference\ retrofit\ plant}$ ” and “ $\epsilon_{el,project\ plant,y}$ ” were corrected, according to the methodology ACM0006 (version 9), these parameters are non-dimensional and are expressed as ratio instead of

	percentage	These minor corrections fulfill with the changes that do not require prior approval by the board stated in Appendix 1 of CDM Project Standard (version 07.0). /4/, /5/
Any Project Design Change been sought and approved by EB for the project?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>On 18/10/2013 TÜV Rheinland (China) Ltd. presented a request for “Post – registration changes” when performing the previous verification for the project activity. On 03/01/2014 was approved.</p> <p>The “Post – registration changes” arises to indicate the packing and storage system in bales which was implemented on 10/12/2010 due to there is not enough free space in the courtyard to store the produced bagasse, the baling is the cheaper process to fix the without causing any change in the bagasse quality.</p> <p>The information is available on follows website link of the project: http://cdm.unfccc.int/PRCContainer/DB/prcp560173984/view</p> <p>The project activity is implemented according to approved revise PDD.</p>
Any Revision in Monitoring plan is sought and approved by EB for the project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<p>None ‘Revision of the Monitoring Plan’ has been submitted to approve of EB.</p> <p>This information can be crosschecked on follows website link of the project: http://cdm.unfccc.int/Projects/DB/TUEV-SUED1135170073.01/view</p>
Does the monitoring report provide line diagram showing all relevant monitoring points?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>On section C ‘Description of monitoring system’ of the Monitoring Report is presented a line diagram with all monitoring points and the equipment used in the operation of the project activity. /2/</p> <p>The verification team confirms on site that the monitoring points are implemented in accordance to the diagram and is adequate to ensure the actual emission reductions.</p>

The timeline of the project’s implementation is as follow:

Milestone of the project activity	Timeline	Assessment by the verification team
Starting date of operation:	01/03/2002	<p>The project activity consists in the improvement of energy efficiency in the Bagasse cogeneration facility at Monte Rosa sugar mill through retrofitting of an existing biomass residue fired power plant.</p> <p>In the current monitoring period, the project has operating 3 boilers and 4 turbo-generators (4 turbines plus 4 generators):</p> <ul style="list-style-type: none"> - Two boilers with an operating pressure of 62 bar each one (named “Caldera 6” and “Caldera 7”); - One boiler with an operating pressure of 13.78 bar (named “Caldera 5”); - One turbo-generator (backpressure) with a nominal capacity of 3 MW (named “Turbo Generador 3”); - One turbo-generator (condensing-extracting) with a nominal capacity of 16.5 MW (named “Turbo Generador 1”); - Two turbo-generators (backpressure) with a nominal capacity of 20 MW (named “Turbo Generador 8” and “Turbo Generador 7”).

Milestone of the project activity	Timeline	Assessment by the verification team
		This in total sums 59.5 MW of nominal capacity installed.
Registration of the project activity	22/06/2006	Crosschecked with the UNFCCC website: http://cdm.unfccc.int/Projects/DB/TUEV-SUED1135170073.01/view?cp=1
Renewal date of the crediting period	22/11/2010	Crosschecked with the UNFCCC website: http://cdm.unfccc.int/Projects/DB/TUEV-SUED1135170073.01/view
1st Crediting period		
1 st monitoring period	01/03/2002 – 30/04/2006	Crosschecked with the UNFCCC website – issued.
2 nd monitoring period	01/05/2006 – 31/05/2007	Crosschecked with the UNFCCC website – issued.
3 rd monitoring period	01/06/2007 – 30/04/2008	Crosschecked with the UNFCCC website – issued.
4 th monitoring period	01/05/2008 – 28/02/2009	Crosschecked with the UNFCCC website – issued.
2nd Crediting period		
1 st monitoring period	01/03/2009 – 30/06/2010	Crosschecked with the UNFCCC website – issued.
2 nd monitoring period	01/07/2010 – 29/05/2011	Crosschecked with the UNFCCC website – issued.
3 rd monitoring period	30/05/2011 – 22/08/2013	Date crosschecked during on site audit. CER calculation considers both days in the monitoring.

In summary, the monitoring period is reasonable and the actual implementation of the project activity is appropriate to its CDM development. The verification took cognizance of § 247, 248 and 249 of CDM Project Standard.

3.2 Compliance of the monitoring plan with the monitoring methodology including applicable tool(s)

The verification team determined against all the information provided in MR, whether in-line with the applied monitoring methodology.

Determination Requirements	Criteria fulfilled	Determination and reporting by the verification team
Any Deviation been sought and approved by EB for the project.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No deviation has been submitted to EB.
Is complete set of data for the specified monitoring period is available	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All data relating to this monitoring period is available and was submitted to the audit team.
Is the required information provided in the monitoring report has been cross-checked with other sources (ex – plant logbooks, inventories, purchase records, laboratory analysis)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>The information provided in the monitoring report has been crosschecked during the on-site visit and submitted in digital format</p> <p>Mainly the information crosschecked was the calibration certificates, data collection, the logbooks and QA/QC procedures.</p> <p>The revised calibration certificates were energy meters, auxiliary meters, weight standards, truck scales, sensible weight scales and calorimetric bomb.</p>
Is the calculation of baseline emissions and project activity emissions and leakage been in accordance with the formulae and methods described in monitoring plan and the applied methodology?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The calculation of the emissions reduction is in-line with the described in monitoring plan and the methodology applied. /2/, /6/

Determination Requirements	Criteria fulfilled	Determination and reporting by the verification team
Is all assumptions used for emission calculation have been justified	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Yes, all assumptions used for emission calculation have been properly justified.
Is appropriate emission factors, IPCC default values and other reference values have been correctly applied	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Yes, the values used have been correctly applied.

The DOE verification team is able to confirm that the monitoring plan contained in the approved revised PDD of 29/08/2013 is in accordance with the approved methodology applied by the project activity, i.e. ACM0006 (version 09).

3.3 Compliance of the Actual monitoring with monitoring plan in the PDD

The monitoring has been carried out in accordance with the monitoring plan contained in the revised approved PDD of 29/08/2013.

3.3.1 Monitored parameters

In the following table it is provided a description of every parameter listed in the monitoring plan and used for calculation of Baseline emissions.

Ex-Post Parameters:

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of PDD):	EG_{project plant,y} Net quantity of electricity generated in the project plant during the year y
Measuring frequency/Time Interval:	Continuous monitored and calculated
Reporting frequency:	Every daily crop bulletin
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Type of monitoring equipment:	Main energy meters and auxiliary equipment meters (relays)
Is accuracy of the monitoring equipment as stated in the PDD? If the PDD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	In the PDD it is not specify the accuracy of the monitoring equipment, however in the Monitoring Report is mentioned that accuracy is 0.2 for main energy meters and for the auxiliary equipment meters the accuracy is 2%. /13/, /14/
Calibration frequency /interval: Is it Board guidance / local or national standards / manufacturers specification	The calibration frequency is once every 2 years.
Is the calibration interval in line with the monitoring plan of the PDD? If the PDD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	In the PDD it is not specify the calibration interval of the monitoring equipment, but in the Monitoring Report is stated that the calibration is held once every 2 years. The selected frequency of calibration is considered correct, as it is based on manufacturer's recommendations, which is a good monitoring practise.
Company performing the calibration:	The company that execute the calibration is 'ENATREL – Empresa Nacional de Transmisión Eléctrica' (National Electricity Transmission Company). /13/, /14/ The new electrical meter installed (Electric, model ION-8600, Serial number PT-1112A347-01) was calibrated by the manufacturer. /14/
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Yes
Is (are) calibration(s) valid for the whole reporting period?	The calibrations are valid for this reporting period.

If applicable, has the reported data been cross-checked with other available data?	Not applicable.
How were the values in the monitoring report verified?	<p>The net quantity of electricity generated in the project is the result of the total electricity generated minus the auxiliary consumption energy.</p> <p>The values in the monitoring report were verified with the records stated in the daily reports of electricity reports and in the spreadsheet. /6/, /24/</p> <p>Noteworthy, during on-site visit, it was reviewed all process of obtaining processing and monitoring of data (from raw data until the data copied in the spreadsheet).</p>
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	<p>Yes, the data management ensures a correct transfer of data as explained below:</p> <p>The net quantity of electricity generated in the project plant is monitored through energy meters installed at the generators and the software controls the operation on the power plant. Data collected is recorded into an electronic spreadsheet administered by the manager of Monte Rosa CDM project.</p> <p>In order to ensure the data quality, the monitoring staff performs an appropriateness monitoring process that includes:</p> <ul style="list-style-type: none"> - Data collection procedures; - Quality of metering / calibration method; - General quality and accuracy of the collected data.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	<p>The server of Monte Rosa receives a daily revision for avoid malfunctions or information losses. Also, the operator of the electrical plant records every hour all power generation information. In case of a deviation of measurement (abnormal measurements), the operator shall verify the correct operation of energy meters, if the evaluation shows that the power meter is not working properly, the equipment is replaced (in the warehouse of Monte Rosa facility there are two energy meters calibrated to replace).</p> <p>During this verified monitoring period, data is complete and neither partial data nor non-activity parameters were observed.</p>

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of PDD):	BF_{k,y} Quantity of biomass residue type <i>k</i> combusted in the project plant during the year <i>y</i>
Measuring frequency/Time Interval:	Continuous measured and calculated
Reporting frequency:	At least monthly aggregated
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Type of monitoring equipment:	Bascules and truck scales
Is accuracy of the monitoring equipment as stated in the PDD? If the PDD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	In the PDD it is not specify the accuracy of the monitoring equipment, however in the Monitoring Report is mentioned that the accuracy of bascules are 0.5% and 0.25%, for the truck scales the accuracy class is medium III (with a verification division: $e = 20 \text{ kg}$ and $e = 10 \text{ kg}$). /15/, /16/
Calibration frequency /interval: Is it Board guidance / local or national standards / manufacturers specification	It is performed an internal calibration of bascules every 15 days respect to calibrated weight standards. These weight patterns are calibrated annually. /15/, /22/ The calibration of truck scales is held annually. /16/
Is the calibration interval in line with the monitoring	In the PDD it is not specify the calibration interval of the

plan of the PDD? If the PDD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	monitoring equipment, but in the Monitoring Report is stated that the internal calibration of bascules is performed every 15 days and the calibration of truck scales is held every year. The selected frequency of calibration is considered correct, as it is based on manufacturer's recommendations, which is a good monitoring practise.
Company performing the calibration:	The company that executes the calibration of weight standards is 'Lanamet – Laboratorio Nacional de Metrología' (National Metrology Laboratory). /15/ The company that performs the calibration of truck scales is 'Basculas Revuelta Maza S.A.'. /16/
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Yes
Is (are) calibration(s) valid for the whole reporting period?	The calibrations are valid for this monitoring period. In the Revuelta truck scales there is a gap between the last and the current calibration, thus the PP applied the maximum error to the daily measurements of ± 20 kg, during that period in order to be conservative.
If applicable, has the reported data been cross-checked with other available data?	Not applicable.
How were the values in the monitoring report verified?	<p>The quantity of biomass residue consumed is directly measured in moist base. The moisture content is used to determine the quantity water contained in the bagasse, in order to calculate the dry bagasse weight.</p> <p>The bagasse produced in the mill can also be determined using the following formula, to crosscheck the bagasse weighted:</p> $\%bagasseinsugarcane = \frac{\%fiberinsugarcane}{100 - \left(moistureofbagasse + \left(\frac{sacaroeseinbagasse}{purityoftheresidualjuice} \right) \times 100 \right)} \times 100$ $bagasse_{moistmass} = sugarcaneprocessed \times \%bagasseinsugarcane$ $bagasse_{drymass} = bagasse_{moistmass} \times (1 - moisturecontent_{bagasse})$ <p>The values in the monitoring report were verified with the records stated in the daily industrial reports and in the spreadsheet. /6/, /30/</p> <p>Noteworthy, during on-site visit, it was reviewed all process of obtaining processing and monitoring of data (from raw data until the data copied in the spreadsheet).</p>
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	<p>Yes, the data management ensures a correct transfer of data as explained below:</p> <p>The entrance and exit of surplus bagasse in the boilers is monitored using weight meters. Data collected is recorded into an electronic spreadsheet administered by the manager of Monte Rosa CDM project.</p> <p>During this monitoring period there was no use of straw, but the possibility is still available for future monitoring periods.</p> <p>In order to ensure the data quality, the monitoring staff performs an appropriateness monitoring process that includes:</p> <ul style="list-style-type: none"> - Data collection procedures; - Quality of metering / calibration method;

In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	<p>- General quality and accuracy of the collected data.</p> <p>The server of Monte Rosa receives a daily revision for avoid malfunctions or information losses. Also, in case of weightbridge failure, the action taken by the project proponents is estimate the quantity of bagasse using the equation mentioned above.</p> <p>During this verified monitoring period, data is complete and neither partial data nor non-activity parameters were observed.</p>
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Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of PDD):	NCV _k Net calorific value of biomass residue type <i>k</i>
Measuring frequency/Time Interval:	At least every 6 months
Reporting frequency:	
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Type of monitoring equipment:	Sensible weight scale and calorimetric bomb
Is accuracy of the monitoring equipment as stated in the PDD? If the PDD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	In the PDD it is not specify the accuracy of the monitoring equipment, however in the Monitoring Report is mentioned that the accuracy of weight scale is 0.1 mg and for the calorimetric bomb the standard deviation is calculated after 10 measurements, if the percentage of standard deviation is greater than 0.17% the data set is discarded and the procedure is performed again. /27/
Calibration frequency /interval: Is it Board guidance / local or national standards / manufacturers specification	The calibration frequency of weight scale and calorimetric bomb is held annually. /18/, /26/ Furthermore, there is an internal calibration twice a year for the weight scale. /25/
Is the calibration interval in line with the monitoring plan of the PDD? If the PDD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	In the PDD it is not specify the calibration interval of the monitoring equipment, but in the Monitoring Report is stated that calibration of weight scales and of calorimetric bomb is performs once a year. The selected frequency of calibration is considered correct; it is based on manufacturer's recommendations, which is a good monitoring practise.
Company performing the calibration:	The companies that performed the calibration of weight scale are 'Merck S.A.' and 'Metrología Consultores S.A.' /18/ The company that performed the calibration of weight standards used to internal verification is 'Lanamet'. /17/ The company that executed the calibration of calorimetric bomb is 'Inbox Technology and Services S.A.' /19/
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Yes
Is (are) calibration(s) valid for the whole reporting period?	The calibrations from both equipments were valid for this monitoring period.
If applicable, has the reported data been cross-checked with other available data?	Not applicable.
How were the values in the monitoring report verified?	<p>The net calorific value of biomass residues were monitored by Monte Rosa Laboratory at least every six months, taking at least 3 samples for each measurement. Actually this parameter is monitored more frequently.</p> <p>The values in the monitoring report were verified with the records stated in the harvest bulletins (daily industrial reports) and in the spreadsheet. /6/, /30/</p> <p>Noteworthy, during on-site visit, it was reviewed all process</p>

	of obtaining processing and monitoring of data (from raw data until the data copied in the spreadsheet).
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	<p>Yes, the data management ensures a correct transfer of data as explained below:</p> <p>The net calorific value of biomass measured by Monte Rosa Laboratory is registered in the harvest bulletins (daily industrial reports). Also, the data collected is recorded into an electronic spreadsheet administered by the manager of Monte Rosa CDM project.</p> <p>In order to ensure the data quality, the monitoring staff performs an appropriateness monitoring process that includes:</p> <ul style="list-style-type: none"> - Data collection procedures; - Quality of metering / calibration method; - General quality and accuracy of the collected data.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	<p>To check the consistency of the measurements, the values obtained are compared with the results of previous years and with relevant data sources (as values in the literature and values used in the national GHG inventory). If there is a significant difference in the comparison, additional measurements are performed.</p> <p>In case of NCV meters failure, the action taken by the project proponents is contract a reputed laboratory to measure this parameter.</p> <p>During this verified monitoring period, data is complete and neither partial data nor non-activity parameters were observed.</p>

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of PDD):	Moisture content of the biomass residues Moisture content in the bagasse
Measuring frequency/Time Interval:	Continuously measured
Reporting frequency:	Mean values are calculated in daily basis
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Type of monitoring equipment:	Sensible weight scale and electric stove
Is accuracy of the monitoring equipment as stated in the PDD? If the PDD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	In the PDD it is not specify the accuracy of the monitoring equipment, however in the Monitoring Report is mentioned that the accuracy of weight scale is 0.1 g and for the electric stove the accuracy is 2°C (corresponding to the thermometer that is inside of the stove). /17/, /18/, /19/
Calibration frequency /interval: Is it Board guidance / local or national standards / manufacturers specification	The calibration frequency of weight scale and electric stove is held annually.
Is the calibration interval in line with the monitoring plan of the PDD? If the PDD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	In the PDD is not specify the calibration interval of the monitoring equipment, but in the Monitoring Report is state that the calibration of weight scale and electric stove is performs once a year.
Company performing the calibration:	The companies that performed the calibration of weight scale are 'Merck S.A.' and 'Metrología Consultores S.A.' /18/ The company that performed the calibration of weight standards used to internal verification is 'Lanamet'. /17/ The company that executed the calibration of thermometer that is inside of electric stove is 'Contemp'. For the internal verification is used a Calibrated temperature standard (brand: Thermo Fisher Scientific Inc., which is calibrated by 'Lanamet'. /20/

Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Yes
Is (are) calibration(s) valid for the whole reporting period?	The calibrations of both equipment are valid for this monitoring period. There is a gap in the calibration validity of electric stove in 2012 for six days (from 04/10/2012 until 10/10/2012), however the project activity was not operative in this period, since the project was in a non-crop season. /6/
If applicable, has the reported data been cross-checked with other available data?	Not applicable
How were the values in the monitoring report verified?	The values in the monitoring report were verified with the records stated in the harvest bulletins (daily industrial reports) and in the spreadsheet. /6/, /30/ Noteworthy, during on-site visit, it was reviewed all process of obtaining processing and monitoring of data (from raw data until the data copied in the spreadsheet).
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures a correct transfer of data as explained below: The moisture content in the bagasse measured by Monte Rosa Laboratory is registered in the harvest bulletins (daily industrial reports). Also, the data collected is recorded into an electronic spreadsheet administered by the manager of Monte Rosa CDM project. In order to ensure the data quality, the monitoring staff performs an appropriateness monitoring process that includes: - Data collection procedures; - Quality of metering / calibration method; - General quality and accuracy of the collected data.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	In case of moisture meters failure, the action taken by the project proponents is contract a reputed laboratory to measure this parameter. During this verified monitoring period, data is complete and neither partial data nor non-activity parameters were observed.

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of PDD):	$\xi_{el, project plant, y}$ Average net efficiency of electricity generation in the project plant in year y
Measuring frequency/Time Interval:	Parameter is calculated
Reporting frequency:	Annually
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Type of monitoring equipment:	Not applicable. This monitoring is calculated.
Is accuracy of the monitoring equipment as stated in the PDD? If the PDD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	Not applicable.
Calibration frequency /interval: Is it Board guidance / local or national standards / manufacturers specification	Not applicable.
Is the calibration interval in line with the monitoring plan of the PDD? If the PDD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	Not applicable.
Company performing the calibration:	Not applicable.

Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Not applicable.
Is (are) calibration(s) valid for the whole reporting period?	Not applicable.
If applicable, has the reported data been cross-checked with other available data?	Not applicable.
How were the values in the monitoring report verified?	<p>The average net efficiency of electricity generation is calculated according to the following formula, stated in the methodology ACM0006 (version 9):</p> $\varepsilon_{el,project\ plant,y} = \frac{EG_{project\ plant,y}}{\sum_k NCV_k \times BF_{k,y}}$ <p>Where,</p> <p>EG_{project plant,y} = Net quantity of electricity generated in the project plant during the year y (MWh/yr)</p> <p>NCV_k = Net calorific value of the biomass residue (GJ/tonnes of dry matter)</p> <p>BF_k = quantity of biomass residue combusted in the project plant during the year y (tonnes of dry matter)</p> <p>The values in the monitoring report were crosschecked with the records stated in the spreadsheet. /6/</p>
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the consistency of data is checked the values with the previous monitoring reports.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	Not applicable.

In summary, verification team confirms that all the ex-post parameters are monitored in accordance to the approved monitoring plan and applied methodology. The verification took cognizance of § 251,252 and 253 of CDM Project Standard.

Ex-Ante Parameters:

Data / Parameter:	EF _{grid,2005-2007} CO ₂ emission factor for the Nicaraguan grid electricity
Default values used:	0.7124 tCO ₂ /MWh
Source and Verification of the source:	Monitoring Report and approved revised PDD. Source verified with the data in the spreadsheet. /2/, /4/, /5/

Data / Parameter	ε _{el,reference retrofit plant} Average net efficiency of electricity generation in the reference power plant after the retrofit that would take place in the absence of the project activity
Default values used:	0.0041 MWh _{el} /MWh _t
Source and Verification of the source:	Monitoring Report and approved revised PDD. Source verified with the data in the spreadsheet. /2/, /4/, /5/

Verification team confirms that ex-ante parameters claimed are in accordance to the approved monitoring plan and applied methodology.

3.3.2 Monitoring responsibility

During the on-site visit, the verification team interviewed with the people in charge of Management System, Business Management, Industrial Management, Energy Area, Automation, Laboratory, Human Resources. /i – xix/

The verification team confirms that the structure of monitoring management team and the responsibilities of team have been defined and followed well in accordance with the approved revised PDD and properly described in the Monitoring Report of this 3rd period of the second crediting period through an organizational diagram.

The monitoring personnel are well trained and they have sufficient competence to carry out the relevant monitoring tasks.

3.3.3 Accuracy of equipment

The monitoring equipment's have been installed in the project activity according to registered monitoring plan. The table below summarizes relevant specifications of monitoring equipment's:

The energy meters used in the project activity are follows:

Monitoring Equipment:	Schneider Energy meters			
Function:	Measure the electricity generated			
Ownership:	Project owner			
Location:	Energy generation area. Circuit name: Turbo generator 4	Energy generation area. Circuit name: Turbo generator 3	Energy generation area. Circuit name: Turbo generator 5	Energy generation area. Circuit name: Turbo generator 2
Monitored parameter:	EG _{project plant,y}			
Type:	ION-8300	ION-8500	ION-8500	ION-8600
Serial number:	PS-0407A141-01	PQ-0406A208-03	PQ-0409A042-03	PT-1112A347-01
Accuracy:	0.2%			
Period of use of equipment:	The equipment were used from 21/11/2011 to 14/07/2012 and from 12/11/2012 to 22/08/2013. /2/			The equipment was used from 12/11/2012 until 22/08/2013
Last calibration date:	07/10/2011	07/10/2011	07/10/2011	16/12/2011
Calibration certificate no. and name of the certifier	Certificate N° 0621 issued by ENATREL (National Electricity Transmission Company). /13/	Certificate N° 0612 issued by ENATREL (National Electricity Transmission Company). /13/	Certificate N° 0613 issued by ENATREL (National Electricity Transmission Company). /13/	Certificate N° 70052-0224-05 issued by Schneider Electric. /13/
Expiration date of calibration:	07/10/2013	07/10/2013	07/10/2013	16/12/2013
Current calibration date:	19/06/2013	19/06/2013	19/06/2013	19/06/2013
Calibration certificate no. and name of the certifier	Certificate N° 0963 issued by ENATREL (National Electricity Transmission Company). /13/	Certificate N° 0966 issued by ENATREL (National Electricity Transmission Company). /13/	Certificate N° 0968 issued by ENATREL (National Electricity Transmission Company). /13/	Certificate N° 0964 issued by ENATREL (National Electricity Transmission Company). /13/
Expiration date of calibration:	19/06/2015	19/06/2015	19/06/2015	19/06/2015
Frequency of calibration:	Once every 2 years	Once every 2 years	Once every 2 years	Once every 2 years
Relevant sectoral standard:	The equipment has been calibrated and tested using equipment and standards traceable to the standards PTB (German Institute of Standards and Measures)			

Monitoring Equipment:	Auxiliary meter				
Function:	Measure the consumption of the auxiliary equipment				
Ownership:	Project owner				
Location:	Steam generation area. Circuit name: Boiler 6	Energy generation area. Circuit name: Cooling tower	Steam generation area. Circuit name: Boiler 7	Steam generation area. Circuit name: Boiler 5 / ash station	
Monitored parameter:	EG _{project plant,y}				
Type:	Brand: General Electric Model: SR750	Brand: General Electric Model: SR750	Brand: General Electric Model: SR750	Brand: General Electric Model: SR750	Brand: General Electric Model: SR750
Serial number:	A2712443	A2741386	B2773072	A2721893	B2731267
Accuracy:	2%				
Period of use of equipment:	The equipment were used from 21/11/2011 to 14/07/2012 and from 12/11/2012 to 22/08/2013. /2/			The equipment was used from 21/11/2011 to 14/07/2012 and from 12/11/2012 to 14/05/2013	The equipment was used from 14/05/2013 to 22/08/2013
Last calibration date:	18/06/2011	18/06/2011	18/06/2011	18/06/2011	03/04/2013
Calibration certificate no. and name of the certifier	Certificate N° 0571 issued by ENATREL (National Electricity Transmission Company). /14/	Certificate N° 0572 issued by ENATREL (National Electricity Transmission Company). /14/	Certificate N° 0569 issued by ENATREL (National Electricity Transmission Company). /14/	Certificate N° 0570 issued by ENATREL (National Electricity Transmission Company). /14/	Certificate of calibration issued by the manufacturer “General Electric”. /14/
Expiration date of calibration:	18/06/2013	18/06/2013	18/06/2013	18/06/2013	03/04/2014
Current calibration date:	19/06/2013	19/06/2013	19/06/2013	This equipment was replaced for malfunction on 14/05/2013	19/06/2013
Calibration certificate no. and name of the certifier	Certificate N° 0970 issued by ENATREL (National Electricity Transmission Company). /14/	Certificate N° 0973 issued by ENATREL (National Electricity Transmission Company). /14/	Certificate N° 0971 issued by ENATREL (National Electricity Transmission Company). /14/		Certificate N° 0972 issued by ENATREL (National Electricity Transmission Company). /14/
Expiration date of calibration:	19/06/2015	19/06/2015	19/06/2015		19/06/2015
Frequency of calibration:	Once every 2 years	Once every 2 years	Once every 2 years	Once every 2 years	Once every 2 years
Relevant sectoral standard:	The equipment has been calibrated and tested using equipment and standards traceable to the standards PTB (German Institute of Standards and Measures)				

The Bascules used in the project activity are follows:

Monitoring Equipment:	Schenk Bascules		
Function:	Weighing bagasse		
Ownership:	Project owner		
Location:	Boilers section. Bagasse Scale #1	Mill	Harvest and non-harvest handling bagasse.

		Bagasse Scale #3 (reject)	Bagasse Scale #2 (claim)
Monitored parameter:	BF _{k,y}		
Type:	BX-2	BX-4	BX-4
Serial number:	131246-01A-BEMP2 H/D	131106-01B-BXO	131106-01A-BXO
Accuracy:	0.5%	0.25%	0.25%
Period of use of equipment:	The equipment were used from 21/11/2011 to 14/07/2012 and from 12/11/2012 to 22/08/2013		
Observation:	The bascules are verified internally every 15 days with calibrated weight standards. The Scale #1 (SN: 131246-01A-BEMP2 H/D) is controlled with 4 weights standards of 3,695 kg to 3,780 kg. The Scales #2 and #3 are verified internally with 4 weights standards of 60.5 Lb.		
Last calibration date:	19/08/2011	23/08/2011	
Calibration certificate no. and name of the certifier	Certificate N° RCM-0853-11 issued by Lanamet (National Metrology Laboratory). /15/	Certificate N° RCM-0855-11 issued by Lanamet (National Metrology Laboratory). /15/	
Expiration date of calibration:	Not available	Not available	
Current calibration date:	06/09/2012	13/09/2012	
Calibration certificate no. and name of the certifier	Certificate N° RCM-1001-12 issued by Lanamet (National Metrology Laboratory). /15/	Certificate N° RCM-0996-12 issued by Lanamet (National Metrology Laboratory). /15/	
Expiration date of calibration:	Not available	Not available	
Frequency of calibration:	Once a year (before a crop season).	Once a year (before a crop season).	
Relevant sectoral standard:	Comparison method for double substitution patterns mass held by the National Metrology Laboratory.		

The truck scales used in the project activity are follows:

Monitoring Equipment:	Revuelta Truck scales	
Function:	Weighing bales of bagasse	
Ownership:	Project owner	
Location:	Harvest handling bagasse. Scale of income (Scale #4)	Harvest handling bagasse. Scale of tare (Scale #4)
Monitored parameter:	BF _{k,y}	
Type:	RCC	RCC
Serial number:	67815C.1408LE	67816C.1408
Accuracy:	Medium III e = 20 kg	Medium III e = 10 kg
Period of use of equipment:	The equipment were used from 21/11/2011 to 14/07/2012 and from 12/11/2012 to 22/08/2013. /2/	
Last calibration date:	19/11/2011	19/11/2011
Calibration certificate no. and name of the certifier	Certificate N° BRM-CC-22152/11 issued by 'Basculas Revuelta Maza, S.A. de C.V.'. /16/	Certificate N° BRM-CC-22119/11 issued by 'Basculas Revuelta Maza, S.A. de C.V.'. /16/
Expiration date of calibration:	Not available	Not available
Current calibration date:	24/11/2012	24/11/2012
Calibration certificate no. and name of the certifier	Certificate N° BRM-CC-24942/12 issued by 'Basculas Revuelta Maza, S.A. de C.V.'. /16/	Certificate N° BRM-CC-24944/12 issued by 'Basculas Revuelta Maza, S.A. de C.V.'. /16/
Expiration date of calibration:	Not available	Not available
Frequency of calibration:	Yearly. There is a gap between the last and the current calibration, by which, the PP applied the maximum error to the daily measurements of ±20 kg, during that period in order to be	

	conservative.
Relevant standard:	sectoral Based on the standard COGUANOR NGO 4015 equivalent to Recommendation OIML R76-1.

The sensible weight scales and calorimetric bomb used in the project activity are as follows:

Monitoring Equipment:	Sensible Weight Scales	Calorimetric Bomb
Function:	To weight the sample of biomass, taken to determine the net calorific value	To determine the net calorific value
Ownership:	Project owner	
Location:	Laboratory	
Monitored parameter:	NCV _k	NCV _k
Type:	Brand: Sartorius / Model: TE214S	Brand: LECO / Model: AC500
Serial number:	23951004	3602
Accuracy:	0.1 mg	The standard deviation is calculated after 10 measurements, if the percentage of standard deviation is greater than 0.17% the data set is discarded and the procedure is performed again.
Period of use of equipment:	The equipment were used from 21/11/2011 to 14/07/2012 and from 12/11/2012 to 22/08/2013. /2/	
Observation:	<p>The weight scale is verified internally using weight standards. During the current monitoring period, 4 internal verifications were performed (31/12/2011 – 25/04/2012 – 18/12/2012 – 12/04/2013)</p> <p>The weight standard used for the internal verification are two, brand Troemner and calibrated by 'Lanamet' /17/:</p> <ol style="list-style-type: none"> 1) Type: 5mg – 100 mg / SN:27803 Calibration dates: 11/08/2011 and 30/08/2012 2) Type: 200 g / SN: 64447 Calibration dates: 12/08/2011 and 31/08/2012 	<p>As part of the current monitoring period, 4 calibrations were performed. The first calibration was on 11/12/2010 by 'Inbox Technology and Services S.A.' (Certificate N° CCI INBOX 008-2010), under the norm ASTM D5865 – 07a. /28/</p> <p>The second calibration was performed internally in 09/12/2011, using the recommended benzoic acid 'LECO 774-208-150 Lot 1026 Benzoic acid' (BTU/LB = 11,374±17). /19/</p> <p>The others two calibrations are indicated below.</p>
Last calibration date:	05/10/2011	28/03/2012
Calibration certificate no. and name of the certifier	Certificate N° 28547-1011, issued by Merck S.A. /18/	Certificate N° CCI INBOX 002-2012, issued by 'Inbox Technology and Services S.A.' /19/
Expiration date of calibration:	05/10/2012	28/03/2013
Current calibration date:	26/09/2012	12/12/2012
Calibration certificate no. and name of the certifier	Calibration N° MC-B-0575-2012, issued by 'Metrología Consultores S.A.' /18/	Certificate N° CCI INBOX 013-2012, issued by 'Inbox Technology and Services S.A.' /19/
Expiration date of calibration:	26/09/2013	12/12/2013
Frequency of calibration:	Once a year (before a crop season).	Once a year (before a crop season).
Relevant standard:	sectoral Based on Technical Regulation NCR 179:1994 Metrology	The calibrations performed were based on the norm AENOR UNE 164001:2005 EX. /29/

Monitoring Equipment:	Sensible Weight Scales	Electric Stove
Function:	To weight the sample of biomass in moist and dry base	To dehumidity the bagasse
Ownership:	Project owner	
Location:	Laboratory	
Monitored parameter:	Moisture content of the biomass residues	
Type:	Brand: Sartorius / Model: TE3102S	Brand: Spencer / Model: TE-060

Serial number:	1925059	11110814
Accuracy:	0.01 g	2°C (corresponding to the thermometer that is inside of the stove)
Period of use of equipment:	The equipment were used from 21/11/2011 to 14/07/2012 and from 12/11/2012 to 22/08/2013. /2/	
Observation:	<p>The weight scale is verified internally using weight standards. During the current monitoring period, 4 internal verifications were performed (31/12/2011 – 24/04/2012 – 18/12/2012 – 12/04/2013) .</p> <p>The weight standard used for the internal verification are five, brand Troemner and calibrated by 'Lanamet' /17/:</p> <ol style="list-style-type: none"> 1) Type: 5mg – 100 mg / SN: 27803 Calibration dates: 11/08/2011 and 30/08/2012 2) Type: 200 g / SN: 64446 Calibration dates: 12/08/2011 and 31/08/2012 3) Type: 200 g / SN: 64447 Calibration dates: 12/08/2011 and 31/08/2012 4) Type: 1 kg / SN: 64449 Calibration dates: 15/08/2011 and 31/08/2012 5) Type: 2 kg / SN: 64451 Calibration dates: 15/08/2011 and 04/09/2012 	In the electric stove, the instrument that must be calibrated is the thermometer that is inside of the stove. The thermometer is brand Tecnal, model TCM 44, SN: 11-73256
Last calibration date:	05/10/2011	04/10/2011
Calibration certificate no. and name of the certifier	Certification N° 28549-1011, issued by Merck S.A. /18/	Certification N° LMC 4708-11, issued by Contemp /20/
Expiration date of calibration:	05/10/2012	04/10/2012
Current calibration date:	26/09/2012	Internal calibration performed on 10/10/2012, using a calibrated temperature standard, the Thermometer, brand: Thermo Fisher Scientific Inc., model: 15-007-8, SN: 80361792, calibrated on 31/08/2012 by Lanamet (Certificaiton N° RCT-0959-12)
Calibration certificate no. and name of the certifier	Certification N° MC-B-0570-2012, issued by 'Metrología Consultores S.A.' /18/	Registration N° 7-LA-R209, issued by Monte Rosa S.A. /20/
Expiration date of calibration:	26/09/2013	10/10/2013
Frequency of calibration:	Once a year (before a crop season).	Once a year (before a crop season).
Relevant sectoral standard:	Based on Technical Regulation NCR 179:1994 Metrology	The thermometer was calibrated based on a comparison method against a thermometer patron guarded by National Metrology Laboratory (Certification N° CNM-CC-420-147/2008)

In summary, the verification team is able to verify that the accuracy the monitoring equipment's were set according to the registered monitoring plan and relevant sectoral standard of country name and technical specification. Furthermore, all calibration procedures were carried out according to the monitoring plan and manufacturer specifications. Therefore, accuracy of monitoring equipment's is assured. The verification took cognizance of § 252 of CDM Project Standard.

3.3.4 Deviation from and/or Revision of the registered monitoring plan

There is not deviation during this monitoring period.

3.4 Assessment of data and calculation of greenhouse gas emission reductions

The verification team confirms that all parameters used are correctly applied and all results are verifiable and transparent. Also, all assumptions are described and based on verifiable evidence and calculations are done in accordance with the revised approved PDD. /2/, /4/, /5/

According to the methodology ACM0006 (version 9), the emission reductions are calculated as follows /5/, /6/:

$$ER_y = ER_{\text{heat},y} + ER_{\text{electricity},y} + BE_{\text{biomass}} - PE_y - L_y$$

Where,

ER_y	Emissions reductions of the project activity during the year y (tCO ₂ /yr)
$ER_{\text{electricity},y}$	Emission reductions due to displacement of electricity during the year y (tCO ₂ /yr)
$ER_{\text{heat},y}$	Emission reductions due to displacement of the heat during the year y (tCO ₂ /yr)
$BE_{\text{biomass},y}$	Baseline emissions due to natural decay or burning of anthropogenic sources of biomass residues during the year y (tCO ₂ e/yr)
PE_y	Project emissions during the year y (tCO ₂ /yr)
L_y	Leakage emissions during the year y (tCO ₂ /yr)

The project activity mainly reduces CO₂ emissions through substitution of power generation with fossil fuels by energy generation with biomass residues, therefore in the emissions reductions of the project activity only is considered the emission reductions due to displacement of the electricity. /4/, /5/

The emission reductions due to displacement of heat is assumed as zero ($ER_{\text{heat},y} = 0$), because to the thermal efficiency of the project plant and the reference plant considered in the baseline scenario are similar. Also, the baseline emissions due to natural decay or burning of biomass residues are zero ($BE_{\text{biomass},y} = 0$), since would not happen in the absence of the project activity in this case.

Furthermore, the project emissions are not considered because, there is no transportation of the biomass residues to the project site ($PET_y = 0$), there is no on-site consumption of fossil fuels due to the project activity ($PE_{FF,y} = 0$), there is no consumption of electricity ($PE_{EC,y} = 0$) and there is no CH₄ emissions from combustion of biomass residues ($PE_{\text{Biomass},CH_4,y}$) and from waste water ($PE_{\text{ww},CH_4,y} = 0$).

Besides, the leakage effects are not considered, due to the diversion of biomass residues to the project activity is already considered in the calculation ($L_y = 0$).

Hence, the emission reductions of the project activity are calculated as follows:

$$ER_y = ER_{\text{electricity},y}$$

The emission reductions due to the displacement of electricity are calculated by multiplying the net quantity of increased electricity generated with biomass residues as a result of the project activity with the CO₂ baseline emission factor for the electricity displaced by the project.

$$ER_{\text{electricity},y} = EG_y \times EF_{\text{electricity},y}$$

Where,

$ER_{\text{electricity},y}$	Emission reductions due to displacement of electricity during the year y (tCO ₂ /yr)
EG_y	Net quantity of increased electricity generation as a result of the project activity (incremental to baseline generation) during the year y (MWh)
$EF_{\text{electricity},y}$	CO ₂ emission factor for the electricity displaced due to the project activity during the year y (tCO ₂ e/MWh)

The emission factor for the electricity displaced ($EF_{\text{electricity},y}$) corresponds to the emission factor of Nicaraguan grid (EF_{grid}), thus $EF_{\text{electricity},y} = EF_{\text{grid},y}$. This parameter has been calculated ex-ante for the period 2005 – 2007 and the value obtained is 0.7124 tCO₂/MWh. /4/, /5/, /6/

According to the methodology ACM0006 (version 9) and considering the characteristics of the project activity, the net quantity of increased electricity generation as a result of the project activity is calculated as follows:

$$EG_y = EG_{\text{project plant},y} \times \left(1 - \frac{\epsilon_{\text{el,baseline plant}}}{\epsilon_{\text{el,project plant},y}} \right)$$

Where,

$EG_{\text{project plant},y}$	Net quantity of electricity generated in the project plant during the year y (MWh)
$\epsilon_{\text{el,baseline plant}}$	Average efficiency of electricity generation in the baseline plant ($\text{MWh}_{\text{el}}/\text{MWh}_{\text{biomass}}$)
$\epsilon_{\text{el,project plant},y}$	Average efficiency of electricity generation in the project plant ($\text{MWh}_{\text{el}}/\text{MWh}_{\text{biomass}}$)

The net quantity of electricity generated in the project plant corresponds to the total energy generated minus the auxiliary consumption energy. The total energy generated was 40,500.8 MWh in 2011 (from 30/05/2011), 227,734.16 MWh in 2012 and 194,169.03 MWh in 2013 (up to 22/08/2013). The auxiliary consumption energy was 2,729.29 MW in 2011 (from 30/05/2011), 16,751.28 MWh in 2012 and 14,142.72 MWh in 2013 (up to 22/08/2013). Therefore, for this monitoring period the values obtained of $EG_{\text{project plant},y}$ were:

$$EG_{\text{project plant}, 2011} = 37,770.79 \text{ MWh}$$

$$EG_{\text{project plant}, 2012} = 210,982.88 \text{ MWh}$$

$$EG_{\text{project plant}, 2013} = 180,026.31 \text{ MWh}$$

The average efficiency of electricity generation in the baseline plant is $0.041 \text{ MWh}_{\text{el}}/\text{MWh}_{\text{biomass}}$, which was calculated ex-ante as stated in the approved revised PDD.

The average net efficiency of electricity generation in the project plant is calculated by dividing the electricity generation during the year y by the sum of biomass residues, as follows:

$$\epsilon_{\text{el,project plant},y} = \frac{EG_{\text{project plant},y}}{\sum_k \text{NCV}_k \times \text{BF}_{k,y}}$$

Where,

$EG_{\text{project plant},y}$	Net quantity of electricity generated in the project plant during the year y (MWh)
$\text{BF}_{k,y}$	Quantity of biomass residue type k combusted in the project activity plant during the year y (tons of dry matter or litter)
NCV_k	Net calorific value of the biomass residue type k (GJ/ton of dry matter or GJ/litter)

The parameter BF_k corresponds to quantity of bagasse produced (dry base), during this monitoring period the values obtained were:

$$\text{BF}_{k,2011} = 61,437.00 \text{ tons of dry matter}$$

$$\text{BF}_{k,2012} = 346,475.75 \text{ tons of dry matter}$$

$$\text{BF}_{k,2013} = 320,369.06 \text{ tons of dry matter}$$

The net calorific values of the bagasse obtained from the on-site measurements were:

$$\text{NCV}_{k,2011} = 17.15 \text{ GJ/ton of dry matter}$$

$$\text{NCV}_{k,2012} = 17.98 \text{ GJ/ton of dry matter}$$

$$\text{NCV}_{k,2013} = 18.54 \text{ GJ/ton of dry matter}$$

Hence, the values obtained of average efficiency of electricity generation in the project plant are:

$$\epsilon_{\text{el,project plant},2011} = 0.13129 \text{ MWh}_{\text{el}}/\text{MWh}_{\text{biomass}}$$

$$\epsilon_{\text{el,project plant},2012} = 0.13678 \text{ MWh}_{\text{el}}/\text{MWh}_{\text{biomass}}$$

$$\epsilon_{\text{el,project plant},2013} = 0.10990 \text{ MWh}_{\text{el}}/\text{MWh}_{\text{biomass}}$$

In this way, the estimations of net quantity of increased electricity generation as a result of the project activity are:

$$EG_{2011} = 25,975.42 \text{ MWh}$$

$$EG_{2012} = 147,739.29 \text{ MWh}$$

$$EG_{2013} = 112,866.53 \text{ MWh}$$

Accordingly, taken into account the equations applied and values obtained previously, the annual emissions reductions are follows:

$$ER_y = ER_{\text{electricity},y}$$

$$ER_y = EG_y \times EF_{\text{electricity},y}$$

$$ER_{2011} = 25,975.42 \text{ MWh} \times 0.7124 \text{ tCO}_2/\text{MWh}$$

$$ER_{2011} = \mathbf{18,505 \text{ tCO}_2/\text{yr} \text{ (rounded value)}}$$

$$ER_{2012} = 147,739.29 \text{ MWh} \times 0.7124 \text{ tCO}_2/\text{MWh}$$

$$ER_{2012} = \mathbf{105,249 \text{ tCO}_2/\text{yr} \text{ (rounded value)}}$$

$$ER_{2013} = 112,866.53 \text{ MWh} \times 0.7124 \text{ tCO}_2/\text{MWh}$$

$$ER_{2012} = \mathbf{80,406 \text{ tCO}_2/\text{yr} \text{ (rounded value)}}$$

For this monitoring period, the total emissions reductions are:

$$ER = 18,505 \text{ tCO}_2/\text{yr} + 105,249 \text{ tCO}_2/\text{yr} + 80,406 \text{ tCO}_2/\text{yr}$$

$$ER = \mathbf{204,160 \text{ tCO}_2 \text{ (rounded value)}}$$

In conclusion, to the verification team's opinion, the monitored data for this 3rd monitoring period of the second crediting period (30/05/2011 – 22/08/2013) is complete, the formulas and default values are applied correctly and all results are verifiable and transparent.

Against the Guidelines on the Applicability of Materiality in Verifications, version 01.0, the verification team further assessed the materiality in verification on the project activity and interpreted as follows:

Reference	Requirement	Verification team assessment
Section 10	<p>The CMP materiality decision prescribes the thresholds for the application of materiality in verifications, by defining that information is material if it might lead, at an aggregated level, to an overestimation of the total emission reductions or removals achieved by a CDM project activity equal to or higher than:</p> <p>(a) 0.5 per cent of the emission reductions or removals for project activities achieving a total emission reduction or removal of equal to or more than 500,000 tons of carbon dioxide equivalent per year;</p> <p>(b) 1 per cent of the emission reductions or removals for project activities achieving a total emission reduction or removal between 300,000 and 500,000 tons of carbon dioxide equivalent per year;</p> <p>(c) 2 per cent of the emission reductions or removals for large-scale project activities achieving a total emission reduction or removal of 300,000 tons of carbon dioxide equivalent per year or less;</p> <p>(d) 5 per cent of the emission reductions or removals for small-scale project activities other than project activities covered under subparagraph (e) below;</p> <p>(e) 10 per cent of the emission reductions or removals for the type of project activities referred to in decision 3/CMP.6, paragraph 38</p>	<p>The emission reductions during this period were 204,160 tCO₂ (18,505 tCO₂/yr in 2011; 105,249 tCO₂/yr in 2012 and 80,406 tCO₂/yr in 2013), then 2% of the emission reductions or removals for this large-scale project activity is the thresholds for the application of materiality (option c).</p> <p>Thus, the materiality threshold of the project activity is identified to be 4,083.2 tCO₂ (i.e. 204,160 tCO₂ x 2%)</p>

	(referred to as microscale project activities).	
Section 24	<p>The DOE should describe in its certification/certification report the risks, the risk assessment undertaken and how the verification and sampling plans were designed to respond to these risks and ensure that all material errors, omissions or misstatements were detected.</p>	<p>In this project activity there is sampling plan to determine the net calorific value and the moisture of the bagasse (biomass residue). The samples are brought to Monte Rosa Laboratory.</p> <p>The risk assessment undertaken consisted to review the complete process of data collection. It was developed as following principal steps:</p> <ul style="list-style-type: none"> - It was revised all parameters defined in the monitoring plan and how data were registered. - Raw data and spreadsheet with the monitoring data records were crosschecked. <p>Also, it was revised the organizational chart, functions and responsibilities of the monitoring plan.</p>
Section 25	<p>The DOE should also describe whether and how the verification and sampling plans were revised to take into account the need for further audit procedures due to the nature/type of errors, omissions or misstatements detected.</p>	<p>As mentioned above, the verification team reviewed all parameters defined in the monitoring plan and it was revised how data were registered.</p> <p>In order to ensure the data quality, the monitoring staff performs an appropriateness monitoring process that includes:</p> <ul style="list-style-type: none"> - Data collection procedures; - Quality of metering / calibration method; - General quality and accuracy of the collected data. <p>The process of collection of data is as follows:</p> <ul style="list-style-type: none"> - The net quantity of electricity generated in the project plant is monitored through energy meters installed at the generators and the software controls the operation on the power plant. Data collected is recorded into an electronic spreadsheet administered by the manager of Monte Rosa CDM project. The server of Monte Rosa receives a daily revision for avoid malfunctions or information losses. Also, the operator of the electrical plant records every hour all power generation information. In case of a deviation of measurement (abnormal measurements), the operator shall verify the correct operation of energy meters, if the evaluation shows that the power meter is not working properly, the equipment is replaced (in the warehouse of Monte Rosa facility there are two energy meters calibrated to replace). - For the quantity of biomass residue (bagasse) combusted, in the entrance and exit of surplus bagasse in the boilers were monitored using weight meters. The server of Monte Rosa receives a daily revision for

		<p>avoid malfunctions or information losses. In case of weightbridge failure, the action taken by the project proponents is estimate the quantity of bagasse using the equation mentioned above.</p> <ul style="list-style-type: none"> - For the net calorific value of biomass residue and moisture content of the biomass residues, samples taken on-site are analysed in the Monte Rosa Laboratory. Data is registered in the harvest bulletins (daily industrial reports). To check the consistency of the measurements, the values obtained are compared with the results of previous years and with relevant data sources (as values in the literature and values used in the national GHG inventory). If there is a significant difference in the comparison, additional measurements are performed. In case of NCV and moisture meters failure, the action taken by the project proponents is contract a reputed laboratory to measure this parameter. <p>For the security, data collected is recorded into an electronic spreadsheet administered by the manager of Monte Rosa CDM project.</p>
Section 26	The DOE should also document how materiality was applied in determining whether a detected error, omission or misstatement was material or immaterial either individually or in aggregate.	No errors were detected in the crosschecked between raw data and spreadsheet with the monitoring data records, therefore the verification team can determine that the detected error is immaterial in aggregate.
Section 27	The DOE should state in its certification/certification opinion that the claimed emission reductions or removals are free from material errors, omissions or misstatements, with a reasonable level of assurance.	<p>The verification team concluded that the procedure of capture and register of data is correct. The process minimizes the error and facilitates the detection of them.</p> <p>Therefore the DOE stated that the claimed emission reductions are free from material errors, omissions or misstatements with a reasonable level of assurance, as is mentioned in the Certification statement contained in this report.</p>

3.4.1 Assessment of actual emission reductions with the estimate emission reductions in PDD

Estimated Emission Reduction as per Registered/Approved PDD:	398,743 tCO ₂ e from 30/05/2011 to 22/08/2013 including both days based on 104,339 tCO ₂ in 2011; 122,286 tCO ₂ in 2012 and 121,223 tCO ₂ in 2013 of estimated emission reductions as indicated in the approved revised PDD (version 04, dated 29/08/2013).					
		ER estimated in the PDD (tCO ₂ /yr)	Operation days based on PDD	Daily average emission reduction based on PDD (tCO ₂ /day)	Real operation days in the monitoring period	Estimated Emission Reduction (tCO ₂)
	2011	104,339	152	687.95	41	28,206
	2012	122,286	156	785.56	246	193,249
	2013	121,223	160	757.64	234	177,289
	TOTAL					398,743
Actual Emission Reduction for the Monitoring Period	204,160 tCO ₂ from 30/05/2011 to 22/08/2013, including both days					
Is any increase of CER's occurred?	No					
Reason for Increase of CER's	Not applicable.					

In summary, verification team confirms that actual emission reduction is lower than the estimate of the approved PDD for the current monitoring period.

The verification took cognizance of § 256 & 257 of CDM Project Standard.

3.5 Issues remaining from the previous verification period

The verification for the monitoring period from 30/05/2011 to 22/08/2013 is the third verification period of the second crediting period of the project.

In the previous verification report, none forward actions were raised. There are no remaining issues from the 2nd monitoring period.

Appendix A

CDM Verification protocol

Monte Rosa Bagasse Cogeneration Project (MRBCP) in Nicaragua

to Report No. 01 997 9105078389

Checklist question	Ref.	MoV ¹	Findings, comments, references, data sources	Draft conclusion	Final conclusion
1. Implementation					
1.1 Have all physical features proposed in the registered PDD been implemented at the project site? § 239 of CDM Project Standard	/1/	DR	Yes, according to the information provided in the Monitoring Report, and during on site visit the project project was implemented as stated on the approved PDD.	Ok	Ok
1.2 Has the project activity been operated in accordance with the project scenario described in the registered PDD and relevant guidance? Reference: < http://cdm.unfccc.int/EB/033/eb33rep.pdf >, §75 § 237 of CDM Project Standard	/1/,/2/,/4/, /5/	DR	<p>CL 1 In the registered PDD states that the new baling system was implemented in 10/12/2011, however in the current Monitoring Report as well in the previous, it is mentioned that it was in 10/12/2010. Other minor changes at the registered PDD are not included in these corrections.</p> <p>CAR 2 The information provided in the footnote 4 of Monitoring Report is not clear.</p>	CL 1 CAR 2	Ok
1.3 If the project activity is implemented on a number of different locations, has the Monitoring report provided the verifiable starting dates for each site? § 240 of CDM Project Standard	/1/,/4/	DR	Not applicable. The project activity is developed in one location as stated in the approved PDD	Ok	Ok
1.4 Is the start date of monitoring period consistent?	/1/	DR	Yes. The previous monitoring plan was from 01/07/2010 to 29/05/2011 and the beginning of current verification period is 30/05/2011.	Ok	Ok

¹ MoV = Means of Verification, DR = Document Review, I = Interview, www = internet search.

Checklist question	Ref.	MoV ¹	Findings, comments, references, data sources	Draft conclusion	Final conclusion
1.5 Is the monitoring report consistently filled with respect to all sections as required by its guideline of filling the monitoring report?	/1/, /2/,	DR	After crosschecking the monitoring report with all sections required by the guideline for filling it [version 04.0, dated 04/10/2013] under VVS track, in the monitoring report is pending the following information: CAR 3 In the Monitoring Report there are format and typo mistakes to be improved.	CAR 3	Ok
1.6 Does the CER's obtained for the monitoring period within the limit of estimate in the registered PDD? Request for justification for higher estimated CER if not clarified.	/1/, /2/, /4/, /5/, /6/	DR	CAR 4 It is not clear how the MR compares the ex-ante calculations in the PDD and the actual emission reduction monitored. CAR 5 In the spreadsheet there are many terms in Spanish.	CAR 4 CAR 5	Ok
1.7 Is the monitoring system provided in line diagrams showing all relevant monitoring points?	/1/	DR	Yes, on the MR the monitoring system has been developed with the main monitoring points, using a flow diagram.	Ok	Ok
2. Monitoring plan and methodology					
2.1 Is the monitoring plan established in accordance with the monitoring methodology? § 186 of CDM Project Standard	/1/, /4/	DR	Yes. The approved PDD with the monitoring plan were crosschecked and they are according to the methodology ACM0006 (version 9). Moreover the PP has a management system which is very solid which includes the monitoring activities as well.	Ok	Ok
2.2 In case the implemented monitoring plan defers from the monitoring methodology, has any requests	/1/	DR	In the current monitoring period no revision or deviation from the monitoring methodology	Ok	Ok

Checklist question	Ref.	MoV ¹	Findings, comments, references, data sources	Draft conclusion	Final conclusion
for revision to or deviation from the monitoring methodology been officially communicated to the CDM EB? Reference: § 258,259,260 of CDM Project Standard (for temporary deviation) § 261,262 of CDM Project Standard (for permanent change)			were requested.		
2.2.1 Have the above changes to the monitoring plan been approved by the CDM EB?	/1/	DR	Not applicable. As indicated on section 2.2 above, no action on this way was held.	Ok	Ok
3. Monitoring and the monitoring plan					
3.1 Is monitoring established in full compliance with the monitoring plan, contained in the registered PDD (or new monitoring plan approved by the CDM EB)? § 264 of CDM Validation and Verification Standard	/1/,/2/	DR	In general the Monitoring process is in full compliance with the Monitoring Plan included in the revised PDD for the second period. Nonetheless it is important to highlight the process more clearly. CAR 6 Missing data architecture diagram to check assurance of data management.	CAR 6	Ok
3.2 Are all baseline emission parameters monitored and updated in accordance with monitoring plan, monitoring methodology and relevant CDM EB decisions?	/1/,/6/	DR	All baseline emissions parameters were well described and also monitored, in accordance with the monitoring and the respective monitoring methodology	Ok	Ok
3.2.1 Was the monitoring equipment for baseline emission parameters controlled and monitoring results recorded as per approved frequency?	/1/,/6/	DR	All devices are well taken in accordance to the monitoring plan. Any change included during the monitoring period is well described in the logbooks based on procedures of the Integrated management system.	Ok	Ok

Checklist question	Ref.	MoV ¹	Findings, comments, references, data sources	Draft conclusion	Final conclusion
3.2.2 Was the monitoring equipment for baseline emission parameters calibrated in accordance with QA&QC procedures described in the registered monitoring plan?	/1/,/2/	DR	<p>During on site visit, the audit team could check all procedures of calibrations and frequencies, according QA/QC. These procedures were included also in the Integrated Management System. Scales were calibrated with measuring standard calibrated according the country institute of normalization, and supporting documents were crosschecked. Regarding energy measurement devices all supporting documents were provided and were crosschecked and are calibrated during the monitoring period.</p> <p>CAR 7 Missing information of the equipment used to measure NCV parameter, joint to the rest of monitoring equipment in point 'Equipment Calibration' in section C of Monitoring Report.</p> <p>CL 8 Regarding the boilers description in the Monitoring plan and in the facility, they didn't match as seen on the on site visit.</p>	CAR 7 CL 8	Ok

Checklist question	Ref.	MoV ¹	Findings, comments, references, data sources	Draft conclusion	Final conclusion
3.3 Are all project emission parameters monitored and updated in accordance with monitoring plan, monitoring methodology and relevant CDM EB decisions?	/1/,/6/	DR	All emissions parameters were crosschecked and are well monitored. Supporting information was crosschecked and provided during on site audit and previous to the audit on site. A solid integrated management system certificated permits the project activity have a good data base, which include internal controls, which could detect mistakes of hand data transferring to digital media i.e. laboratory data spot check.	Ok	Ok
3.3.1 Was the monitoring equipment for project emission parameters controlled and monitoring results recorded as per approved frequency?	/1/,/6/	DR	Yes. PP has an integrated management system which covers these issues, and was well controlled. Frequency was respected.	Ok	Ok
3.3.2 Was the monitoring equipment for project emission parameters calibrated in accordance with QA&QC procedures described in the registered monitoring plan?	/1/,/2/	DR	<p>Not applicable. There are not project emissions considered for this project activity, there are only baseline emission by electricity consumption.</p> <p>Crosschecking the Monitoring report and supporting information we find some issues regarding the dates for energy (certificates 2011-2012 and 2012-2013).</p> <p>CAR 9</p> <p>For 2011, certificates were corrected nonetheless date from ION-8600 which is 16/12/11 instead of 21/12/11.</p> <p>For the calibration dates for the 2nd calibration they are in general 19/06/2013 not 18/06/2013.</p>	CAR 9	Ok

Checklist question	Ref.	MoV ¹	Findings, comments, references, data sources	Draft conclusion	Final conclusion
3.4 Are all leakage emission parameters monitored and updated in accordance with monitoring plan, monitoring methodology and relevant CDM EB decisions?	/1/,/4/	DR	No leakage effects need to be accounted. The diversion of biomass residues to the project activity were considered in the calculation of baseline reductions.	Ok	Ok
3.4.1 Was the monitoring equipment for leakage emission parameters controlled and monitoring results recorded as per approved frequency?	/1/,/4/	DR	Not applicable.	Ok	Ok
3.4.2 Was the monitoring equipment for leakage emission parameters calibrated in accordance with QA&QC procedures described in the registered monitoring plan?	/1/,/4/	DR	Not applicable.	Ok	Ok
3.5 Were all monitoring parameters available and verifiable through the whole monitoring period?	/1/,/2/	DR	Yes. All supporting information was available during on site audit. Nonetheless some tables (in the monitoring report were not well addressed) CAR 10 Tables in MR wrong addressed	CAR 10	Ok
3.5.1 In case, only partial monitoring data is available and PP(s) provide estimations or assumptions for the rest of data, was it possible to verify those estimations and assumptions? Reference: < http://cdm.unfccc.int/EB/026/eb26rep.pdf >	/1/	DR	No assumption were considered, all data was available in hand made format and digital	Ok	Ok
3.6 Was management and operation system established and operated in accordance with the monitoring plan?	/1/	DR	Yes. Operation system established works under an integrated management system which considered the monitoring plan and specific parameters which support the Monitoring Plan	Ok	Ok

Checklist question	Ref.	MoV ¹	Findings, comments, references, data sources	Draft conclusion	Final conclusion
3.7 Was is it possible to verify that involved management and operation personal is fully aware of the responsibilities and perform all operations according to the registered monitoring plan and internally developed manuals?	/1/	DR,I	Yes all responsibilities, job descriptions and duties were described in the monitoring report.	Ok	Ok
3.8 Does the monitoring system provide organizational structure, role and responsibilities, emergency procedures?	/1/	DR	Monitoring report includes an organizational structure, also shown in the MR, figure 8 which was crosschecked during on site activities. During the audit the working involved in the project activity were attending the starting meeting, the site specific activities, and also the closure meeting. Integrated management system takes in account this structure.	Ok	Ok
3.9 Does any uncertainties identified and addressed?	/1/	DR	Yes, included in the calculation. According to VVS uncertainties should be considered, and PP includes in their calculations the respective uncertainties.	Ok	Ok
4. Parameters					

Checklist question	Ref.	MoV ¹	Findings, comments, references, data sources	Draft conclusion	Final conclusion
4.1.1 Monitored parameter Title: $EG_{\text{project plant},y}$ Indication: Net quantity of electricity generated in the project plant during the year y Units: MWh/yr Estimated value (<i>ex-ante</i>): 198,637 (for 2011); 228,187 (for 2012) and 235,190 (for 2013) Measured value (<i>ex-post</i>): 37,770.79 (for 2011); 210,982.88 (for 2012) and 180,026.31 (for 2013)	/1/,/4/,/6/	DR	The monitored parameter is in line with the approved revised PDD. The net quantity of electricity generated in the project is the result of the total electricity generated minus the auxiliary consumption energy. This parameter is monitored through energy meters installed at the generators and the software controls the operation on the power plant. The values in the monitoring report were verified with the records stated in the spreadsheet.	Ok	Ok
4.1.2 Monitored parameter Title: $BF_{k,y}$ Indication: Quantity of biomass residue type k combusted in the project plant during the year y Units: tonnes of dry matter Estimated value (<i>ex-ante</i>): 248,404 (for 2011); 269,340 (for 2012); 310,227 (for 2013) Measured value (<i>ex-post</i>): 61,437 (for 2011); 298,315.8 (for 2012); 241,148.89 (for 2013)	/1/,/4/,/6/	DR	The monitored parameter is in line with the approved revised PDD. The entrance and exit of surplus bagasse in the boilers were monitored using weight meters. During this monitoring period there was no use of straw, but the possibility is still available for future monitoring periods. The values in the monitoring report were verified with the records stated in the spreadsheet.	Ok	Ok

Checklist question	Ref.	MoV ¹	Findings, comments, references, data sources	Draft conclusion	Final conclusion
4.1.3 Monitored parameter Title: NCV _k Indication: Net calorific value of biomass residue type k Units: GJ/tonnes of dry matter Estimated value (<i>ex-ante</i>): 17.85 Measured value (<i>ex-post</i>): 17.61 (for 2011); 17.95 (for 2012); 18.60 (for 2013)	/1/,/2/,/4/,/6/	DR	The monitored parameter is in line with the approved revised PDD. CL 11 Who validate the data obtained by “Monte Rosa Laboratory”. Is this lab ISO 17025 accredited for this? CAR 12 The table on section D.2 of MR is not well filled, according to the information provided in the methodology and PDD. The parameters are not well described on this section, Also did not include previous calibrations to cover all current monitoring period. Parallel to the answer it is necessary to provide an improved PDD which contain the minor correction	CL 11 CAR 12	Ok
4.1.4 Monitored parameter Title: Moisture content of the biomass residues Indication: Moisture content in the bagasse Units: % Estimated value (<i>ex-ante</i>): 50 (from 2009 to 2011 crop seasons) and 45 (from 2012 to 2016 crop seasons) Measured value (<i>ex-post</i>): 51.44 (for 2011); 51.17 (for 2012); 51.32 (for 2013)	/1/,/4/,/6/	DR	The monitored parameter is in line with the approved revised PDD. The moisture content in the bagasse measured by Monte Rosa Laboratory. The values in the monitoring report were verified with the records stated in the harvest bulletins (daily industrial reports) and in the spreadsheet.	Ok	Ok

Checklist question	Ref.	MoV ¹	Findings, comments, references, data sources	Draft conclusion	Final conclusion
4.1.5 Monitored parameter Title: $\epsilon_{\text{el,project plant},y}$ Indication: Average net efficiency of electricity generation in the project plant in year y Units: ratio Estimated value (<i>ex-ante</i>): 0.158 (for 2011); 0.167 (for 2012); 0.15 (for 2013) Measured value (<i>ex-post</i>): 0.1313 (for 2011); 0.13677 (for 2012); 0.1099 (for 2013)	/1/,/2/,/4/,/6/	DR	See CAR 12. CAR 13 According to the methodology ACM0006 (version 9), this parameter is non-dimensional.	CAR 12 CAR 13	Ok
4.2.1 Default parameter Title: $EF_{\text{grid},2005-2007}$ Indication: CO ₂ emission factor for the Nicaraguan grid electricity Units: tCO ₂ /MWh Default/Used value: 0.7124	/1/,/4/,/6/	DR	The value is correctly applied as per in the revised approved PDD.	Ok	Ok
4.2.2 Default parameter Title: $\epsilon_{\text{el,reference retrofit plant}}$ Indication: Average net energy efficiency of electricity generation in the reference power plant after the retrofit that would take place in the absence of the project activity Units: - Default/Used value: 0.041	/1/,/2/,/4/,/6/	DR	See CAR 13	CAR 13	Ok
5. Calculations					

Checklist question	Ref.	MoV ¹	Findings, comments, references, data sources	Draft conclusion	Final conclusion
5.1 Have all the calculations related to the baseline emissions been carried according to the formulae and methods described in the registered PDD and applied methodology? § 246 of CDM Project Standard	/1/,/4/,/6/	DR	Calculation of baseline were developed under the methodology and tools used for the project activity, however this point was reviewed during on-site visit. CAR14 Mistakes appears in the calculation spreadsheets.	CAR-14	Ok
5.2 Have all the calculations related to the project emissions been carried according to the formulae and methods described in the registered PDD and applied methodology?	/1/	DR	Not applicable. There are not project emissions considered for this project activity, there are only baseline emission by electricity consumption.	Ok	Ok
5.3 Have all the calculations related to the leakage emissions been carried according to the formulae and methods described in the registered PDD and applied methodology?	/1/	DR	Not applicable. No leakage effects need to be accounted. The diversion of biomass residues to the project activity were considered in the calculation of baseline reductions.	Ok	Ok
6. Specific verification requirements on CCS project activities (VVS Section 10.2)					
6.1 Was the monitoring conducted in accordance with the monitoring plan? Had the provisions for monitoring set out in section 11.7 of the PS?	/1/,/4/	DR	Not applicable. It is not a CCS project activity.	Ok	Ok
6.2 Is the site development and management plan being adhered to?	/1/,/4/	DR	Not applicable. It is not a CCS project activity.	Ok	Ok
6.3 Were any significant deviations observed during history matching? List the deviations.	/1/,/4/	Dr	Not applicable. It is not a CCS project activity.	Ok	Ok

Checklist question	Ref.	MoV ¹	Findings, comments, references, data sources	Draft conclusion	Final conclusion
<p>6.4 In case of seepage occurred from the geological storage site of the CCS project activity during the verification period:</p> <p>Were the remedial measures and plans described in “the risk and safety assessment” implemented and effective?</p> <p>Did a net reversal of storage occurred? Quantified?</p>	/1/,/4/	DR	Not applicable. It is not a CCS project activity.	Ok	Ok
<p>6.5 Have PPs carried out history matching and updated the numerical models used to characterize the geological storage site by conducting new simulations using the monitored data and information?</p>	/1/,/4/	DR	Not applicable. It is not a CCS project activity.	Ok	Ok
<p>6.6 Does the geological storage site no longer meets the requirements set out in section 11.4 of the PS? If yes, The DOE shall provide a negative opinion on validation and/or verification.</p>	/1/,/4/	DR	Not applicable. It is not a CCS project activity.	Ok	Ok
<p>6.7 Does this verification was a subsequent in the crediting period? Is it later than five years after the end of the previous verification period?</p> <p>Or the initial verification?</p> <p>Or one beyond the end of the last crediting period?</p> <p>Or the last verification/certification for the termination of monitoring?</p>	/1/,/4/	DR	Not applicable. It is not a CCS project activity.	Ok	Ok

Table 2: List of Requests for Corrective Action (CAR) and Clarification (CL)					
No.	Type of request	Observation	Reference (Table 1)	Summary of project owner response	Verification team conclusion
1.	CL	CL 1: In the registered PDD states that the new baling system was implemented in 10/12/2011, however in the current Monitoring Report as well in the previous, it is mentioned that it was in 10/12/2010. Other minor changes at the registered PDD are not included in these corrections.	1.2	The actual beginning of the baling system implementation was in 10/12/2010 (DD/MM/YY), because since that day the Baling records started to be registered in the system, as could be conferred in the past verification data sheet. There was a typo error in PDD that do not affect for any reason the additionality of the project or the application of methodology. In conclusion, the PDD had a minor amendment in the text from 10/12/2011 to 10/12/2010 (DD/MM/YY). The amended PDD was sent in together with this protocol.	Ok. CL Closed. Improvement of the PDD was made and during upload of the Verification report this will be informed an considered as a minor change as this change and correction will not affect any further rationale related to additionality or methodology application, as stated on the Appendix I of the Project standard version 7.0 "Changes that do not require prior approval by the board."
2.	CAR	CAR 2: The information provided in footnote 4 of Monitoring Report is not clear.	1.2	The footnote 4, explains how the ex-ante emission reductions that were estimated in PDD, are used in the present monitoring report with the intention of comparing them with the monitoring period emission achievements. PP considered as welcome the requirement of rephrasing this footnote in order to all the same understanding of this topic.	Ok. CAR Closed. Footnote 4 was corrected and rephrased to understand in a clear manner the definition of ex-ante emissions.
3.	CAR	CAR 3: In the Monitoring Report there are	1.5	All the MR issues were reviewed and	Ok. CAR Closed.

		format and typo mistakes to be improved.		corrected when was required. Considering the coordinates presented in MR, they are expressed in decimal degrees, so the nomenclature is indeed correct.	In the updated MR all comments of the audit team regarding typo and format mistakes were amended.
4.	CAR	CAR 4: It is not clear how the MR compares the ex-ante calculations in the PDD and the actual emission reduction monitored.	1.6	The following clarification was introduced in the MR, FOOTNOTE 4: <i>“It is important to highlight that the crop seasons are split into two years; they always start in November and finish at the middle of the next year. At the moment of PDD ex-ante calculation, PP considered 6 months per crop season; being November and December in one year and January, February, march and April in the other year. Moreover, it was considered a significant time loss per crop season. So in order to have clearance for comparing the ex-ante estimative with the actual emissions, it was necessary to determine a “daily emission reduction” that later will be multiplied by the real operation days in order to have a quantity of emission reductions that would be avoided in ex-ante conditions. In PDD the 2010-2011 crop season had 149 days, so 99 days correspond to January to April (is the fraction 4/6); the 2011-2012 crop season had 157 days, so 52 days correspond to 2011 (2/6) and 105 days to 2012 (4/6); the 2012-2013 crop season had 153 days, so 51 days (2/6) correspond to 2012 and 102 days (4/6) to 2013 and the 2013-2014 crop season had 174 days being 58 days (2/6) related to November to December 2013. The days per year were aggregated annually as is showed in the CERs spreadsheet: 152 days in 2011, 156</i>	Ok. CAR closed. Documents were provided to support the footnote (4) were checked and are correctly applied.

				<p>days in 2012 and 160 days in 2013. The Ex-ante estimates were divided by the assumed days in order to determine the above-mentioned “daily emission reduction”.</p> <p>The actual operating days were determined based on the crediting period from 21/11/2011 to 22/08/2013. In 2011 the total number of the days was 190, because there were 149 days from the past verification (01/01/2011 to 29/05/2011) and only 41 days from 21/11/2011 to 31/12/2011 that is part of the current monitoring period; in 2012 there was the complete year, it means 246 days (part in the beginning of 2012 and part at the end of 2012); finally in 2013 there was 279 days in total, because 234 days from 01/01/2013 to 22/08/2013, that are included in this monitoring period.</p> <p>Finally the Ex-ante estimates are the result of multiplying the “daily emission reduction” by the actual operating days. The results are: 28,205.93 tCO_{2e} in 2011; 193,248.54 tCO_{2e} in 2012 and; 177,288.64 tCO_{2e} in 2013 totalizing 398,743.10 tCO_{2e}.”</p>	
5.	CAR	CAR 5: In the spreadsheet there are many terms in Spanish.	1.6	<p>The CERs spreadsheet was duly reviewed and amended when was necessary in order to translate every text and comment into English as UNFCCC requirement.</p> <p>All the typo errors were amended after a detailed revision.</p>	Ok. CAR Closed. ER spreadsheet was correctly amended.
6.	CAR	CAR 6: Missing data architecture diagram to check assurance of data management.	3.1	<p>The information is explained in section C of the Monitoring report. However some updated was made in the roles and responsibilities table, specifically it was updated the commercial head for the</p>	Ok . CAR Closed. Data architecture was included and MR also was updated.

				Automation head.	
7.	CAR	CAR 7: Missing information of the equipment used to measure NCV parameter, joint to the rest of monitoring equipment in point 'Equipment Calibration' in section C of Monitoring Report.	3.2.2	<p>The information regarding NCV parameter was included in section C of the last version of MR.</p> <p>Considering the validity of calibrations, please refer to the following clarifications:</p> <ul style="list-style-type: none"> • <u>Considering the weight standards calibration:</u> Calibrations are made on site, i.e. in the laboratory facilities of MR and that people who perform them, then made the certificate, so almost always the date of calibration is different from the date on which the certificate is issued. Important thing is that the dates are declared in the emitted certificate in order to verify their validity. • <u>Considering the periodicity of calibration and re-calibrations:</u> Is established to make external calibration once a year and internal checks with lower frequencies in order to validate the aptitude of the equipment between two external calibrations. All these programming's are done before starting the harvest period. The entire calibration program is registered in the internal document coded as "7 - LA - G028", this program is submitted with this answer. Please refer to the 	<p>Ok. Section C was completed including the measurement devices and calibrations periods of them as requested according internal procedures. CAR closed.</p>

				<p>archive named as: «Programa de Calibracion Laboratorio MR.pdf».</p> <ul style="list-style-type: none">• <u>Considering the no presence of validity in the calibrations certificates:</u> Based on the clause 5.10.4.4 of the ISO/IEC 17025 norm, “a calibration certificate (or calibration label) shall not contain any recommendation on the re-calibration interval except where this has been agreed with the customer. This requirement may be replaced by laws”. In addition the companies that Monte Rosa work with, do not make recommendations on the validity or suggestion re - calibration. <p>Regarding Registry for calibration and adjustment Calorimeter (LECO), please refer to the attached document named as “UNE 164001-2005 EX.pdf”:</p> <ul style="list-style-type: none">• <u>Benzoic acid as Pattern:</u> The UNE 164001-2005 is used by Monte Rosa for perform the internal checks. This norm is also used by the external accredited laboratory, who is the LECO’s representative. As mentioned in page 5, item 1 of the mentioned norm, this norm is	
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				<p>applicable for determination of calorific value of solid biofuels as the sugar cane bagasse is. Considering the benzoic acid as pattern, please refer to the page 7, item 5.3 of the UNE 164001-2005 when is clearly specified that the benzoic acid is the recommended pattern.</p> <ul style="list-style-type: none"> • <u>Periodicity and validity of calibrations:</u> Given the stability of the equipment used and that the pattern has no expiration date, it has been established to perform an annual external calibration and internal checks every 4 months in order to assess the suitability of the equipment during this time, as indicated in «Programa de Calibracion Laboratorio MR.pdf». The UNE 164001-2005 EX norm also states in page 16, item A.5, that the calibration must be done at least each 6 months,so as the PP performs this checks each 6 months, they are being conservative. 	
8.	CL	CL 8: Regarding the boilers description in the Monitoring plan and in the facility, they didn't match as seen on the on site visit.	3.2.2	<p>The names of the Boilers were updated in order to be consistent with the names adopted in the facility.</p> <p>All the typo errors were amended after a detailed revision.</p>	Ok. Boilers numeration was changed in the improved MR according the description given at site.

					CL closed.
9.	CAR	<p>CAR 9: For 2011, certificates were corrected nonetheless date from ION-8600 which is 16/12/11 instead of 21/12/11.</p> <p>For the calibration dates for the 2nd calibration they are in general 19/06/2013 not 18/06/2013.</p>	3.3.2	There is a typo error, and was corrected in the new version of the Monitoring report.	<p>Ok. Correction was included.</p> <p>CAR Closed.</p>
10.	CAR	CAR 10: Tables in MR wrong addressed	3.5	The tables were addressed accordingly.	<p>Ok. Tables were improved and well addressed.</p> <p>CAR Closed.</p>
11.	CL	CL 11: Who validate the data obtained by “Monte Rosa Laboratory”. Is this lab ISO 17025 accredited for this?	4.1.3	Monte Rosa Laboratory does not have ISO 17025 accreditation, however, they have strong internal procedures and guidelines of measuring that follows international and/or recommended standards. These internal guidelines are followed with outstanding discipline as the verification team verified in field, In addition, all the measuring equipment are calibrated in day for third accredited parties, covering all the period.	<p>Ok. Monte Rosa Laboratory can be considered as a reputed laboratory which fulfills with the methodology ACM0006 (version 9).</p> <p>CL Closed.</p>

				Monte Rosa laboratory, has internal control system in order to appoint any incongruence in the measured or inputted values by means of a security range that is represented by colours, showing a red alert when the data is suspicious at any moment. The value is immediately reviewed and the essay is repeated up to converge in a correct data.	
12.	CAR	CAR 12: The table is not well filled, according to the information provided in the methodology and PDD. The parameters are not well described on this section. Also PP did not include previous calibrations to cover all current monitoring period. Parallel to the answer it is necessary to provide an improved PDD which contain the minor correction	4.1.3 4.1.5	<p>All the tables were reviewed in order to be coherent with the registered PDD.</p> <p>The calculations were reviewed carefully and were corrected as necessary</p>	<p>Ok. Calculations were correctly applied, considering all improvements. An improved PDD was submitted with the correction requested. DOE will submit the improved PDD together with the final verification report submitted for the request for issuance, due to the minor corrections fulfil with the changes that do not require prior approval by the board stated in Appendix 1 of CDM Project Standard (version 07.0).</p> <p>CAR Closed</p>
13.	CAR	CAR 13: According to the methodology ACM0006 (version 9), this parameter is non-dimensional.	4.2.2	The parameters units were amended to be in accordance with the methodology.	Ok. Ratios were described in the improved MR and in the new PDD as required by the

					methodology. DOE will submit the improved PDD together with the final verification report submitted for the request for issuance, due to the minor corrections fulfil with the changes that do not require prior approval by the board stated in Appendix 1 of CDM Project Standard (version 07.0). CAR closed.
14.	CAR	CAR14: Mistakes appears in the calculation spreadsheets.	5.1	The calculations in the spreadsheet was reviewed and corrected if any in the new version of the Monitoring Report.	Ok. Calculation spreadsheet was correctly updated. CAR closed.

Table 3: List of forward action requests (FARs)				
FAR number	Observation	Reference	Summary of project participants' response	Verification team conclusion
FAR1	-	-	-	-

Appendix B

Certification statement
to the Verification Report 01 997 9105078389

Certification statement

TUV Rheinland (China) Ltd., the DOE, has performed the verification of the registered CDM project activity “UNFCCC Registration № 0191”, “Monte Rosa Bagasse Cogeneration Project (MRBCP)” in Nicaragua. The project activity is designed to generate emission reductions by substitution of power generation with fossil fuels by energy generation with biomass residues.

The project participants are responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project. It is DOE’s responsibility to express an independent verification statement on the reported GHG emission reductions from the project. The DOE does not express any opinion on the selected baseline scenario or on the validated and registered PDD. The verification is carried out in-line with the VVS requirements.

The verification was performed to identify the compliance of the project activity with implementation and monitoring requirements, and to verify the actual amount of achieved emission reductions, through obtaining evidence and information on-site that included i) checking whether the provisions of the monitoring methodology and the monitoring plan were consistently and appropriately applied, ii) the collection of evidence supporting the reported data and iii) emission reductions that are claimed is free from material errors, omissions or misstatements.

The verification is based on:

- Approved revised PDD “Monte Rosa Bagasse Cogeneration Project (MRBCP)”, version 4, dated 29/08/2013; approved by EB on 03/01/2014 and its monitoring plan;
- Approved monitoring methodology ACM0006 “Consolidated methodology for electricity generation from biomass residues”, version 9;
- Previous verification report, version 03 dated 30-08-2013;
- Monitoring report version 2.1, dated 14-07-2014.

This statement covers verification period of 816 days between 30-05-2011 and 22-08-2013.

The DOE has raised 3 clarification and 11 corrective action requests, all of which have been successfully resolved by PPs.

The DOE considers necessary to give reasonable assurance that reported GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology and the monitoring plan contained in the revised approved PDD are fairly stated.

The breakdown of the emission reductions for the monitoring period has also been clearly demonstrated; with emission reduction for second commitment period calculated using the latest GWPs and the following is verified to be correct:

Actual emission reduction for the monitoring period up to (and including) 31 December 2012	123,754 tCO ₂
Actual emission reduction for the monitoring period from (and including) 1 January 2013	80,406 tCO ₂

The DOE , hereby certifies that the project activity, achieved emission reductions by sources of GHG equal to 204,160 tCO₂ equivalent and all monitoring requirements have been fulfilled.

The DOE states that the Claimed emission reductions are free from material errors, omissions and misstatements with a reasonable level of assurance.

2014-08-13
Date



Mr. Henri Phan
DOE Manager
TÜV Rheinland (China) Ltd.

2014-08-13
Date



Walter Tang
Technical Reviewer
TÜV Rheinland (China) Ltd.

2014-07-30
Date



Mr. Víctor Abarca
Team Leader
TÜV Rheinland Chile S.A.

Appendix C

CERTIFICATES OF COMPETENCE

Qualification

Abarca Arriagada, Víctor Claudio /

Emission Trading

United Nations Framework Convention on Climate Change

(The following data is set by the certification body)

Auditor No.:
(AuditorenRegNr)

Appointed:
(Zugelassen)

ja

Qualification Lead Auditor
Level:
(Qualifikationsstufe)

External:
(Externer)

ja

Add. reviewer:
(Zusätzlicher
Prüfer)

EAC Scopes:
(EAC Branchen)

CDM 13 - Waste handling and disposal
CDM 01 - Energy industries (renewable - / non-renewable sources)
CDM 06 - Construction

Add.
qualification:
(zus. Qualifikation)

First
Appointment:
(Erstberufung)

22-10-2010

Valid to:
(Gültig bis)

21-10-2015

Remarks:

TA 1.2 - Renewable energy
TA 6.1 - Construction
TA 13.1 - Waste handling and disposal

Languages:

Spanish
German
English

Qualification

Odobez, Norberto Santiago /

Emission Trading

United Nations Framework Convention on Climate Change

(The following data is set by the certification body)

Auditor No.:
(AuditorenRegNr)

Appointed:
(Zugelassen)

Qualifikation Expert
Level:
(Qualifikationsstufe)

External:
(Externer)

Add. reviewer:
(Zusätzlicher
Prüfer)

EAC Scopes: (EAC Branchen)

CDM 01 - Energy industries (renewable - / non-renewable sources)
CDM 03 - Energy demand

Add.
qualification:
(zus. Qualifikation)

First Appointment:
(Erstberufung)

19-05-2012

Valid to:
(Gültig bis)

18-05-2015

Remarks:

Valid for TA 1.1, 1.2, 3.1, 4.5

Languages:

Spanish
English

Qualification

Reyes, Marisela /

Emission Trading

United Nations Framework Convention on Climate Change

(The following data is set by the certification body)

Auditor No.:

(AuditorenRegNr)

Appointed:

(Zugelassen)

Qualification

Level:

(Qualifikationsstufe)

Trainee

External:

(Externer)

Add. reviewer:

(Zusätzlicher
Prüfer)

EAC Scopes:

(EAC Branchen)

Add.

qualification:

(zus. Qualifikation)

First

Appointment:

(Erstberufung)

08-02-2013

Valid to:

(Gültig bis)

08-01-2016

Remarks:

Languages:

Spanish

English

German

Qualification

Tang, Walter /

Emission Trading

United Nations Framework Convention on Climate Change

(The following data is set by the certification body)

Auditor No.:
(AuditorenRegNr)

Appointed:
(Zugelassen)

ja

Qualification Level:
(Qualifikationsstufe)

Lead Auditor

External:
(Externer)

Add. reviewer: yes
(Zusätzlicher Prüfer)

EAC Scopes:
(EAC Branchen)

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

Add.
qualification:
(zus. Qualifikation)

First
Appointment:
(Erstberufung)

10-10-2011

Valid to:
(Gültig bis)

10-09-2015

Remarks:

Appointed as Technical Reviewer for TA 1.1, 1.2, 2.1, 2.2, 3.1 Direct work experience. TA 4.1, 4.3, 4.5, 13.1 based on Annex D of the Accreditation Standard

Languages:

Chinese simplified
English